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ABSTRACT

These instructional materials on agricultural diversification and marketing were developed for use by Iowa's vocational and technical agricultural instructors and extension personnel. This document is one of three manuals making up a single package. (The other two are Christmas Tree Production and Marketing and Sod Production and Marketing). The manual includes three instructional units. Unit I discusses the procedures for establishing and implementing an individualized production plan that will enable the development and maintenance of a viable diversified farming operation. Unit II identifies the primary marketing channels for fruit and vegetable crops and explores sales strategies and methods required to establish and maintain successful marketing options. Unit III provides crop-specific postharvest handling and packaging requirements. Each unit provides an instructional plan and related technical information. The instructional plan features objectives, interest approach, a listing of materials needed, and teaching procedures. The technical information section in each unit provides concise information on the topic. Transparency masters and activity sheets are included to facilitate teaching. Suggested use of these materials is included in the instructional plan. A descriptive list of 40 slides that supplement the instructional units is also provided. The second half of this document contains the "Farmers Market Development Manual," which covers the steps involved in establishing and maintaining a farmers market. Sections include interest surveys, site selection and development, funding and budgeting, market rules, state and local regulations, the market manager, promotions and advertising, the grower group, and market management records. (KC)

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Agricultural Diversification and Marketing

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Agricultural Diversification and Marketing Series

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1.	Agriculture Diversification and Marketing	June 1986
2.	Fruit and Vegetable Production and Marketing Book I: Raspberry, strawberry, cole crops, potato, sweet corn, tomato, vine crops, and marketing. Fruit and vegetable production and marketing.	December 1985
3.	Book II: Apples, grapes, asparagus, beans, lettuce, rhubarb, root crops; juding, grading, and exhibiting fruits and vegetables.	June 1986
4.	Christmas Tree and Firewood Production and Marketing	June 1986
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Foreword

These instructional materials and technical information on Agricultural Diversification and Marketing were developed for use by Iowa's vocational and technical agricultural instructors, extension personnel and other interested parties. This notebook includes the following instructional units:

Unit I:
  Agricultural Diversification
Unit II:
  Marketing Strategies
Unit III:
  Crop-Specific Market Condtions

Each unit provides an instructional plan and related technical information. The instructional plan features objectives, interest approach, a listing of materials needed, and teaching procedures. The technical information section in each unit provides concise information on the topic. Visual masters (VM) and activity sheets (ACT) are included to facilitate teaching. Suggested use of these materials is included in the instructional plan. The VMs and ACTs are coded with letters (AD-Agricultural Diversification, MK-Marketing Strategies, CS-Crop-Specific Market Conditions) so they can be identified with the appropriate unit.

Diversification of agricultural production is foreseen as a realistic solution for creating a more positive future for Iowa's family farms, but it must be understood that this is not an instant solution or the right solution for everyone. Strategies for diversification must be thoroughly researched and well-planned. Unit I discusses the procedures for establishing and implementing an individualized production plan that will enable the development and maintenance of a viable diversified farming operation.

In order to diversify production it is imperative to understand market functions and the basics of marketing a variety of products. Unit II identifies the primary marketing channels for fruit and vegetable crops and explore sales strategies and methods required to establish and maintain successful marketing options.

Fruit and vegetable growers must produce quality products to be competitive in the commercial market. Unit III provides crop-specific postharvest handling and packaging requirements on the crops covered in Book I of the Fruit and Vegetable Production and Marketing notebook. These products include: broccoli, brussels sprouts, cabbage, cantaloupe, cauliflower, kohlrabi, potatoes, pumpkins, raspberries, strawberries, summer squash, sweet corn, tomatoes, watermelon and winter squash.

To be successful, any student of diversification must understand the total concept of diversification and be an expert in the market area he/she plans to serve. Much has been accomplished in terms of awareness. Full educational needs, both technical material and market knowledge, must now be met if the expansion of Iowa's economic base is to be successful through diversification. This notebook has been developed to enhance these efforts.

Camille A. Valley
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Iowa Department of Agriculture and Land Stewardship

Dan Cooper
State Horticulturist
Iowa Department of Agriculture and Land Stewardship

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Agricultural Diversification
Objectives

After the completion of this unit the students will be able to:

1. Define Agricultural Diversification.
2. List and describe the importance of six steps in the development and maintainance of a viable diversified farm.
3. Identify ten sources of information and outline three characteristics of good information.
4. Survey the resources of an existing farm operation based on four conditions.
5. Describe the parts of a business plan, explain the value of one.
6. Explain the advantages and disadvantages of a diversified farming operation.

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Market Development
Objectives

After the completion of this unit the students will be abel to:

1. Describe the advantages and disadvantages of selling to the four marketing channels.
2. List and describe the importance of the four major considerations in the development of a marketing strategy.
3. List eight principles of a good personal sales strategy.
4. Identify and describe the five factors that constitute a valid contract.
5. Compare written and oral contracts of sale.
6. State the three basic ways to increase customers.

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Crop-Specific Market Conditions
Objectives

After the completion of this unit the students will be able to:

1. Identify and describe the major post-harvest precooling methods.
2. Describe the reasons behind proper post-harvest handling and precooling.
3. List containers for shipping fresh produce, siting examples of product that is packaged in each type of container.
4. Describe basic handling and storage requirements for each of the crops addressed within this unit.

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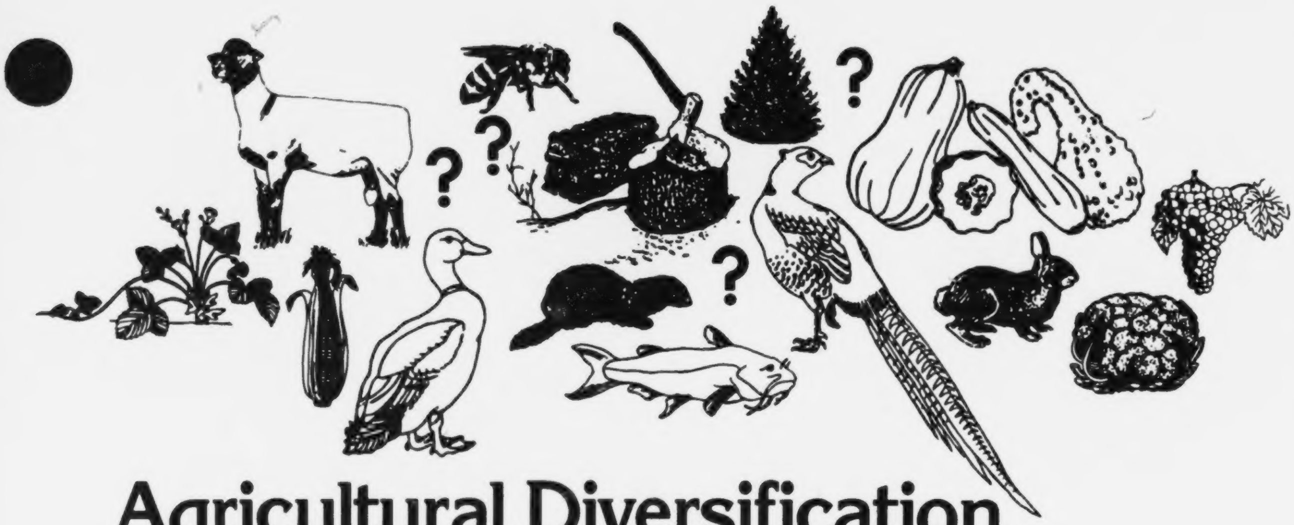

Agricultural Diversification

Objectives

After completion of this Unit, the student will be able to:

1) Define Agricultural Diversification.

2) List and describe the importance of six steps in the development and maintainance of a viable diversified farm.

3) Identify ten sources of information and outline three characteristics of good information.

4) Survey the resources of an existing farm operation based on four conditions.

5) Describe the parts of a business plan, and explain the value of one.

6) Explain the advantages and disadvantages of a diversified farm operation.

Visual Masters

VM-AD-1	Farm Operation #1
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ACT-AD-1A	(Answer Sheet)
ACT-AD-2	Inventory
ACT-AD-3	Tracking Prices
ACT-AD-3A	(Price Data Sheet)
ACT-AD-4	To Do or Not To Do?
ACT-AD-4A	(Answer Sheet)
ACT-AD-5	Six Steps
ACT-AD-5A	(Answer Sheet)

Interest Approach

Give each student a copy of activity sheet ACT-AD-1. Instruct them to complete the activity sheet within a specified period of time.

Instruct the students tell what they found. Point out additional enterprises which they have missed (ACT-AD-1A).

Mention to the class the diverse nature of agriculture itself for providing shelter, food, fiber, fuel and ornamentation.

Lead a discussion on how farms of the past compare to farms of today.

Teaching Procedures

1) Present to the class three illustrations of farming operations (Use VM-AD-1, VM-AD-2, & VM-AD-3)

   Ask the student to select the one which is the best example of the concept of diversification and ask them to tell you why.

   Inform the students of what agricultural diversification means today and its purpose.

   Outline the basic characteristics of a diversified agricultural producer (VM-AD-4).

   Introduce to the class the process that will be presented for developing and maintaining a diversified farming operation (VM-AD-5)

2) After reading each of the following statements ask how many students would be ready to try the alternative crop of Zupple, . **(Do not let them know that each statement will be followed by an additional statement.)**

   a) A well-known national magazine covers the huge success of a midwestern farmer in the production of Zupple—$20,000 net profit per acre.

   b) Findings, presented by nutritutional researchers indicate that Zupple has all of the necessary daily requirements for vitamins A and E. It contains a higher source of protein than soybeans. It retains all of its vitamins and protein during cooking. And, they concluded that it is 'the' perfect product for health consious people.

   c) Local newspaper reports that Zupple has the fastest growing demand of all vegetables ...up 964% in the last six months.

   d) The local retail store price for Zupple is $10 per pound.

   e) Iowa producer produces and markets 4,000 pounds of Zupple grown on four acres.

   f) State land grant university researchers complete 10-year variety trials and release recommendations on the best Zupple cultivars for Iowa.

Begin a discussion on the importance of thorough research and proper use of information when considering new ventures (Use VM-AD-6).

Briefly point out the discrepancies that might have existed for the examples given in the class activity:

Statement (a)—Only 1/8 acre may have been produced and incomplete records kept.

Statement (b)—It may be healthy ...but it may taste terrible.

Statement (c)—Without knowing actual quantity demanded, a percent increase can be deceiving.

Statement (d)—Price may be high because of high costs associated with production and/or handling.

Statement (e)—This information tells that it can be grown in Iowa, but it does not tell whether it was profitable.

3) Discuss existing farm resources and on-farm demands (Use VM-AD-7 and VM-AD-8). Outline the four major conditions to look for in evaluating existing on-farm resources.

Instruct each student to conduct an inventory of existing resources available/utilized for an S.O.E. project. (Use ACT-AD-2).

4) Discuss the importance of understanding basic marketing and production factors, before the decision is made to produce a new product (Use VM-AD-9 and VM-AD-10).

Provide each student with two copies of activity sheet ACT-AD-3. Instruct them to select one alternative enterprise from ACT-AD-3A and to track past market prices. On one sheet record each month's average price and on the other sheet track each week's average price.

Have the students discuss their findings and explain the value of knowing detailed market information.

Point out that fluctuations in market price can be experienced. Tracking prices enables the producer to target profitable periods.

5) Discuss the components of a business plan (Use VM-AD-11).

Invite a local banker to the class to explain how and what a lender looks for in evaluating a plan.

6) Discuss the elements of good recordkeeping (Use VM-AD-12 and VM-AD-13).

Invite a business analyst to the class to discuss the importance of keeping accurate and thorough records...highlighting the types of information that can be generated for use in planning future farm activities.

7) Review the advantages and disadvantages of diversifying a farm operation (Use VM-AD-14).

Discuss with the students their interest in pursuing this farm management approach.

Instruct the students to do activity sheets ACT-AD-4 and ACT-AD-5.

Extra Suggested Activities

1) Invite producers of three distinctly different alternative enterprises to visit. Have them explain how they decided to start production and what unexpecteds they discovered.

2) Instruct each student to: select one enterprise; investigate sources of information; develop a bibliography, and to indicate the top five sources of information, explaining why.

3) Instruct the students to send for information on alternative agricultural enterprises, which can be used to build a library.

Technical Information

Introduction

Modern agricultural diversification is not a revival of farming practices from days gone by. Farms of the past often consisted of: chickens, ducks, laying hens, milk cows, fruit trees, a vegetable garden, sheep, cattle, hogs, horses, corn, wheat, hay, bee hives, and a wood lot. The purpose of these farms was self-sufficiency of the farm family. Extra product was sold locally to provide income for additional family needs, which they themselves could not provide.

Over time specialization in grain crops for export has become the norm. Now farm families rely on cash income to provide the majority of their needs. This has left many farmers in a very vulnerable position. The high value of the U.S. dollar in the international marketplace has reduced exports. Domestic prices keep falling as surpluses accumulate. Overproduction continues. The federal government acts as a "guaranteed buyer," through the commodity programs. Farmers have become production-oriented rather than market-oriented. Getting away from total dependency on commodity production and developing a more diversified range of agricultural enterprises can offer greater protection from shifts in the marketplace.

Today, when agricultural diversification is referred to, it is not a large variety of production enterprises that is being sought. It is the development of a mix of ventures, which typically respond differently in the marketplace and thereby balance out and result in an economically viable farming operation overall. This in most cases, requires creating a farming operation that is more responsive to consumer market incentives or "true" market demand.

Background

Creating a diversified farming operation is not for everyone. Most businesses face the constant problem of finding customers for their products, and adapting their production systems and products as:

1) Customer preference changes;
2) The products of their competitors improve; and
3) New technologies become available.

A diversified agricultural producer will have to do the same. These producers will learn how to produce goods as cheaply as their competitors (making more efficient use of their resources) and they will become more alert than their competitors to changing market conditions, as well as new market opportunities. The producer's emphasis will have to change to profitability rather than production.

In addition, a producer must be willing to make changes. The shift away from total involvement in federally controlled commodity production toward a farming operation more reliant on the marketplace will not be easy. Control will return to the individual producer. Risk associated with not having a "guaranteed buyer" will be present. Individual choice will increase regarding such things as:

1) What crops to produce;
2) What markets to target;
3) What inputs to use; and
4) How costs are managed.

The producer must also be able to gather and analyze all of the necessary facts before coming up with an answer. Having all decisions made with no alternatives can result in problems. Decisions should be properly evaluated in terms of the overall condition of the farm operation, market conditions, and the producer's individual objectives. Premature decisions are typical of persons who try to directly adapt their business operations to ideas which have proven successful for others. There are limits to the extent in which one producer's success can be transferred to another. A major problem with this type of development scheme is that little critical thinking is done on whether the idea makes sense for the individual farming operation. It is the differences among farming operations that provides the best opportunities for success. Therefore, producers who successfully diversify will often be innovative, cautious, decisive, and analytic.

Developing a diversified farm operation is not a quick and easy solution to an existing farm crisis. Too many people want to proceed too quickly. A few do have the ability and the means to shorten the length of time it takes for developing the production and marketing techniques required of new enterprises. This can be accomplished by hiring the expertise which a new producer may lack. Even still, the key is to initiate a process for establishing and implementing an individualized production plan. Such a plan will enable the development and maintenance of a viable farm operation. There are six basic steps in this process:

1) Analysis of existing conditions;
2) Idea formulation and analysis;
3) Plan selection and development;
4) Market development;
5) Implementation; and
6) Evaluation.

First Step- Analysis of Existing Conditions

The first step requires looking at the on-farm production components, and outside factors which influence production. There are four major conditions to look for when evaluating existing on-farm resources.

1) Those resources which are not utilized should be identified and consideration should be made regarding the various options which might be employed. For example, with idle equipment the choices may be to:
    a) Sell;
    b) Start a custom service;
    c) Pursue an agricultural enterprise that would make use of the equipment; or
    d) Leave it idle.

    Each option under consideration should be evaluated to determine its value for meeting the overall farm goals.

2) Those resources which could be more efficiently utilized, thereby freeing up a portion for another enterprise. The ability to make this determination will largely depend on the detail contained in records kept during previous years of operation.

3) Those resources in which there is a willingness to redirect from an existing enterprise to an alternative enterprise.

4) Those resources which could be replaced with something that is more versatile or more efficient.

For any resource that falls into one of these categories, the minimum return necessary from any action taken should be calculated. To be economically viable the action should be equal to or be greater than the resource's past earning power. This evaluation should address labor, land, capital, management, and additional factors.

LABOR

A starting point for evaluating the value of existing labor, is to determine labor productivity ratios. This would be the ratio of income generated to man-hours of labor utilized. These ratios can then be evaluated against the figures from other farms or from agricultural statistical records. Caution however should be exercised when these ratios are evaluated. The productivity of labor is directly related to the level of technology to which it is applied. If investment has not been made in the technologies utilized by that which the comparison is drawn against, a lower labor productivity ratio will most likely result. This is not necessarily bad. It points out why the producer should be aware of relationships between man hour consumption and the type or degree to which equipment is utilized.

At times it may appear as though there is an abundant supply of labor. This is common when there is a high unemployment rate or a high rate of outmigration, due to the inability to secure employment in the area. However, these two factors do not necessarily mean that there is an available and suitable labor force in the area. Farm labor, in many cases, requires long hours, holiday/weekend work, low wages, and/or offers only seasonal employment. Many people do not find these job characteristics suitable. In addition, many alternative crop/livestock operations require specialized knowledge and/or skills, which may not be common among the available labor force. If the use of unskilled labor is contemplated, then an adjustment factor needs to be calculated into the cost per man hour in order to compensate for initial inefficiencies.

Another misconception that often exists is that family members provide "free" labor. The producer needs to be aware of the going market rate per hour for all required labor...regardless if it is a family member or a hired employee. In doing so, protection will also be provided against the possible problem of a family member becoming unavailable and another person hired in his/her place.

LAND

Many times there is a tendency to look towards production on marginal lands when farm income is down. However, for almost all crops, including the production of fuel wood, nursery stock, and vegetables, the best land will always provide the highest yields, Yield is one factor in determining if the enterprise will be profitable.

In addition to noting basic soil types, any chemical carryovers should be noted and the length of time that has passed since chemicals were used. Any information available regarding the type and level of chemicals present in the soil should be recorded. Analysis of soil samples can provide this type of information.

For someone just entering farming, or for someone who is considering buying or leasing additional land, choices of sites should be evaluated. This should include such things as current vegetative cover, waterways, depth to under ground water resources, erodability, and productivity ratios.

CAPITAL

There are three basic types of capital available to the producer.

1) Real capital—which includes the value of land and any permanent improvements.

2) Operating capital—the amount used to cover variable costs. This includes the cash and physical resources needed to operate the farm during a given year.

3) Investment capital—the amount used to cover fixed costs. Those things necessary to maintain the farm operation over a period of years (i.e., machinery, equipment, and livestock kept for breeding).

The ability to obtain funds is determined by:

A) Owner equity: the total value of the owner's share of the assets, either owned in part or outright; and

B) Debt capital: the share of operating, investment and real capital which must be paid back to a lender with accumulated interest.

If there is an interest in acquiring additional debt capital, the maximum that a producer can obtain will be determined by:

1) The producer's amount of equity;

2) The producer's willingness to assume the risk of higher debt; and

3) The reliability of both the producer and the outlined plan as viewed by a lender.

There are also other sources for obtaining investment capital. These sources include:

1) Leasing/renting;
2) Establishing a partnership; or
3) Pooling capital with other producers.

In addition to identifying the capital available for reallocation, attention should also be given to the current cash flow situation of the total farm operation. Problems where the timing of cash returns does not match the timing of cash outlays should be noted.

MANAGEMENT
Successful farm management involves the ability to plan, measure and make decisions. The manager must choose among options available in utilizing resources to accomplish desired goals. Management must be flexible, evolve, grow and be capable of rapid response to a changing environment. The level of skills and degree of interest in labor need to be taken into account for both production and marketing. The producer should also assess his/her willingness to acquire additional education.

ADDITIONAL FACTORS
Climatic conditions will also affect the suitability for producing alternative agricultural enterprises. The highs, lows and monthly averages should be noted for humidity, precipitation, temperatures, wind factors, as well as the last frost and first frost dates. These factors are especially important when determining the suitability of producing something which has not been previously produced in the state or country. Similarities in climatic conditions, as well as other factors, may indicate if a particular type of production is possible for an Iowa producer.

After all available resources for production have been identified, their characteristics noted and their value calculated, time frames need to be charted. Times should appear in this calendar matrix when farm resources are available and/or when there is an overlap in demand by the various farm enterprises. It should also be noted the relationships or interdependence between enterprises.

Second Step– Idea Formulation & Analysis

The very nature of agriculture is diverse in that food, fiber, fuel, shelter and ornamental products can be produced. It would be impossible for a producer to undertake a detailed analysis of all the agricultural enterprise options. Therefore, the starting point should be based on the preconceived notion, that certain enterprises will be good additions for the overall farming operation.

Enterprises that are selected for consideration will in many cases be dictated by the region of the country in which the farm is located and/or by the unique characteristics of the individual farm. In addition, the initial selection of alternatives will commonly be based upon one or more of the following assumptions:

1) It will make use of existing available resources (i.e., land, equipment, labor,).

2) It will provide a high net income.

3) It will complement existing enterprises (i.e., bee keeping due to existing orchard).

4) It will provide an input that is necessary for another enterprise.

5) Production will be easy.

6) It requires minimal initial investment.

7) It will be a superior product than that which is currently offered in the marketplace.

8) There is an expanding market for the product.

9) It is a stable enterprise which will provide stable returns year after year.

10) It will contribute to the development of a self-sufficient farm.

11) It will be a fast turn-around enterprise.

12) It results in a non-perishable product and there will be more flexability in the time that it can be marketed.

13) It will be enjoyable to produce.

The decision-making process, however, will strive to individually prove:

A) Which of the selected alternatives should or should not be undertaken; and

B) Which will or will not act as a management strategy for minimizing the risk of great fluctuation in the overall farm income.

In order to adequately analyze and determine if any of the initial selection of alternatives are suitable for the farm operation, the gathering of information on production and marketing factors is necessary.

A 1985 Iowa Department of Agriculture survey of Iowa farmers illustrated some of the misconceptions that can exist without a good data base on which to formulate decisions. Thirty-nine percent of the respondents to the survey indicated that out of 16 basic crop and livestock production areas, the number one alternative interest was for diversifying into vegetable production. However, when asked to indicate what inputs would be necessary in order for them to diversify their operations, labor and irrigation ranked last. Vegetable production is a very labor intensive enterprise and irrigation is a must for maintaining a viable commercial operation year after year.

Access to good information is essential. Information utilized needs to be:

1) Reliable,
2) Complete, and
3) Come from an appropriate source for both the producer's individual circumstances and for the enterprise under consideration.

More than one source of information is recommended. This will allow for uncovering discrepancies. For enterprises, in which commercial production in the area is uncommon, information may be available from other areas which have engaged in the enterprise for a number of years. It should be noted though, not all information can be transferred geographically. Any information that is obtained from a distant area should strictly be used as baseline information...to fill in where little is known without it. And, adjustments should be made based on the differences between the areas. The following are some major sources of information.

1) Producer Organizations.
Membership and active participa-

tion can provide valuable production and marketing insight. Technical information can be obtained through newsletters and conference proceedings. In many cases there are local, state, regional and national organizations.

2) The USDA. Many reports and publications are available that cover production and marketing. Current and historical data may be available. Information is frequently compiled as averages of large areas of the country and it may not be applicable.

3) State Departments of Agriculture. Market studies, price trends, production levels and other pertainent information is generally available. Information on most crops and livestock which are actively produced in the state or in which production is felt to be viable is usually available.

4) Cooperative Extension Service. Production and marketing information is generally available for enterprises that have been historically raised in the state and in which many years of research has been undertaken. Newletters and booklets are usually available on various areas of production.

5) Colleges/Universities. Courses, workshops and consultation may be available.

6) Neighboring Producers. The availability and adaptability of information may be dependent on the neighbors willingness to release information, the degree to which accurate records were maintained and the similarities between the farm operations.

7) Media (magazines, newspapers, journals). Generally the information provided is incomplete and not totally representative of the situation. This can lead producers to false conclusions.

8) Private Consultants. Fact finding can be simplified by hiring the expertise to provide the desired information. This may be a costly approach. Caution should be taken to insure appropriate expertise exists and that the information is more than just presenting information gathered by a university, state department, or the federal government.

9) Supply Companies. Information on the type and amount of supplies that will be necessary can be obtained from these sources.

10) Trial and error. Some trial and error is necessary for filling in the gaps where production and marketing information is not available. If possible, it should not be the basis of all discoveries. A great amount of time and money can be expended, with this approach, before success is realized.

In order to prove or disprove the assumptions used to establish the initial selection of alternatives, the producer must consider both production and marketing factors.

PRODUCTION FACTORS

First, environmental conditions need to be considered. If an enterprise has been successfully undertaken in the same state or region of the country, it is often considered an appropriate undertaking. Many times though, the differences experienced among various areas of the state are enough to hamper the successful production of certain agricultural enterprises. Noting the specific environmental requirements would include not only climatic conditions, but also water quality and availability, and soil characteristics.

Second, the producer must discover the steps needed to produce a marketable product and what production technologies exist. The producer should be aware of problem areas such as:

1) Effect of soil residues on the crop
2) Chemical drift tolerances
3) Pest susceptibility of various breeds/cultivars

The producer should be aware of the production technologies that exist. Available technologies may:

1) Reduce the amount of labor required
2) Speed up the production cycle
3) Protect the product from adverse conditions
4) Increase yields
5) Reduce livestock mortality rates

Developing an understanding of existing production technologies can also help create a picture of what the competition might be doing.

Third, a summary listing should be developed of the type and amount of resources needed per unit of production. This would include such things as equipment, supplies, labor, structures, land, and management. Preparing a time table or use schedule for each resource can be a valuable aid in the selection of enterprises.

MARKETING FACTORS

First, the producer must know if there is an existing market demand for the product. For example, research may have discovered a product which is far superior to a traditional product. However, if the targeted consumer/buyer group is not familiar with the product then the product would not have a current market demand. A great amount of time and money may need to be expended develop a demand.

Second, the producer must define the market channel(s) of interest. Products may be marketed:

1) Directly to consumers,
2) To retail outlets,
3) To wholesalers,
4) To processors/manufacturers, or
5) To export markets.

The market channel choosen may depend on the producer's ability to undertake or hire the marketing expertise required. Market outlets further from the end user/consumer often require greater marketing expertise, demand larger volumes of product, and offer lower per unit prices. Outlets closer to the end user usually offer higher per unit prices, demand smaller volumes, and require more servicing or the provision of additional services.

Third, the producer must know what unit price to expect. Daily, weekly or monthly price high and low ranges over the past three to five years, for the period during the year when the product will be marketed, should be obtained. The information should be reliable and it should reflect the market which the producer intends to target. Price information enables the producer to see the variability in market price. It also allows the producer to evaluate the profitability of the venture.

Fourth, the producer needs to determine his/her basic market area. The boundary of an individual's geographic market area is defined by how far the product can travel and at least breakeven.

(+) Expected market price
(-) Cost of transportation
(-) Total costs of production
(=) Dollar amount greater than or equal to zero.

When a new producer supplies a portion of the market demand either another supplier or another product is being displaced. Therefore, a new producer must develop an understanding of the competition that exists.

With respect to competing suppliers, such an analysis will allow for the determination of:

A) Whether or not a product of equal or superior quality can be offered in the marketplace;

B) Whether the price, required of the new producer, can be competitive; and

C) What services, offered by the competition, can be met or exceeded.

Existing suppliers may be difficult to displace. This may be due to their firmly established reputations.

Competing products are those which satisfy the same use (i.e., chicken and beef are both sources of protein). Buyers/consumers will frequently switch demand between competing products based solely on which is offered at the lowest market price. Some new products are often anticipated to successfully compete with current products due to their long-range economic benefit. For example, an alternative food source offering a healthier and richer source of protein. However if an alternative product only provides long-range economic benefits, then the traditional product will retain the majority of the demand. This is because the consumer realizes the economic benefit of immediate cost savings.

All marketing conditions for the alternative agricultural enterprises, should be figured into the overall planning projections. This is especially true when commercial production is not typical for the area. Initial returns will more than likely be lower than the averages of established farms of the same size. The producer who is attempting production and marketing of a new product should—**avoid the ease of multiplying average yield by the high end of past market prices for obtaining expected gross revenues.** Adjustments, making the calculations more conservative, will assist in minimizing the effects on required returns, should seasonal problems occur.

Third Step– Plan Selection & Development

By the end of the second step some of the originally selected alternative enterprises may have been eliminated. This is generally due to obstacles that the producer is unwilling or unable to overcome.

During the third step in the process, a plan will be choosen from the remaining alternatives that satisfies both the goal and resources of the producer. The plan should incorporate enterprises which will result in marketable products and where a portion of the market demand can be captured.

Comparison of the resource demand matrices, developed in the first two steps of the process, should indicate feasible possibilities for the producer. This comparison may indicate areas where too many conficts exist between what is needed and what can be obtained. In some cases only adjustments may be needed for the alternative(s) to be compatible with the overall farming operation. The demand matrices comparison can also result in the need to go back a step to investigate other possibilities.

After satisfactory alternatives have been found for the farm operation, budgets need to be prepared for the additional enterprise(s). The scale of operation that will be initially pursued should be taken into account. A more complex budgeting process will be warranted for those decisions which impact the traditional appropriation of resources. The affects of diminished resource on other farm enterprises will then be known.

Next a detailed schedule must be prepared for the farm's cash flows. Preparation of cash flow budgets on a monthly basis allows the producer to test the financial feasibility of the proposed plan. Seasonal adjustment can be made when projected annual net cash flow is positive but negative for some periods during the year. Understanding the overall farm's cash flow allows the producer to:

1) Plan on shifting the timing of some sales or expenditures;

2) To increase short-term borrowing during periods of negative cash flow; or

3) To delay the due date on fixed debt payments to periods when cash flow is positive.

(NOTE: Once again problems may now become apparent that would not otherwise have been discovered if only annual budget figures were evaluated.)

In addition to analyzing the selected diversification plan, the producer also needs to address potential production/marketing problems which may exist. At this point decisions should be made and plans laid for alternative actions, should the problem(s) arise. The producer should also determine the impact on the overall farm's operation and budget, if the alternative actions are implemented. By addressing problems prior to their occurence the producer will be able to expedite implementation and reduce the negative impacts on expected outcomes.

Now the producer should be ready to put together a business plan with the information that has been compiled. A business plan will provide the producer with a guide to follow for the year. The plan should also include the information required by any potential financial lender/investor. A business plan is a written description of why, how and when an enterprise will achieve a stated level of profitability. It should contain:

1) A short summary about the type of alternative agricultural enterprise that is to be pursued, providing information on which the decision was made.

2) A description of why the enterprise is expected to be profitable, including the following:

   a) The market—
      *Who will buy the product ...demonstrating an understanding between a general need and a qualified potential customer.

      *The amount of demand for the product.

      *The amount that will be offered for sale.

   b) The product—
      *A description of how the product compares with others in the marketplace.

      *Whether there will be a competitive distinction.

      *Who and why do they agree with the particular assessment of the product.

   c) The means and area of distribution—this section will clearly indicate whether or not the producer has a clear grasp of what it actually takes to sell the product to the potential customers in the near future.

   d) The competition—
      *Where the end user is

currently receiving like supplies.

*What are the sizes, structures and relative successes of the businesses already serving the market.

*Whether anticipated sales will be taking sales away from competitors or establishing new markets.

*What response or retaliation might be expected from competitors.

*Whether or not the product to be produced will be equal or better than the industry average.

e) The sales—

*The volume and expected dollar amounts over the next five years.

*The anticipated percentage of market sales to be captured.

*The volume of production required to cover all fixed expenses.

*The efforts that will be implemented to support the sales effort.

3) A description of how the alternative agricultural enterprise will operate to become and stay profitable.

a) The key personnel—the qualifications of all of the people who will contribute directly to the success of the enterprise.

b) The organization—

*In outline form present who is accountable to whom and for what.

*The general and administrative costs necessary.

c) The marketing—

* An outline of the basic strategy and planned tactics to generate revenue.

*The actions that will be taken if sales fail to meet expectations.

*The strategies for pricing, servicing, guarantees, and training.

d) The production—

*A description of the expected unit costs.

*The timing and requirements for capital expenditures.

*The amount of resources produced as well as purchased.

*The alternative actions that will be taken should costs be excessive.

*The quality control measures that will be implemented.

*The degree to which the production effort is adaptable to different volumes and other products.

e) Accounting controls—

*A narrative on how the operations will be monitored, both production and marketing.

*The manner in which receivables and expenditures will be handled.

*The reporting system utilized.

*The costs involved.

4) A description of when the alternative agricultural enterprise will reach a stated level of profitability.

a) The cash flow—

*The impact of all the projected expenses on the expected revenues.

*The money invested in the enterprise on a monthly basis for the first twelve months and quarterly for the following year.

*The point at which a positive cash flow is expected.

*The point at which capital is required.

b) The pro forma balance sheet—allows comparison between what is anticipated and the realities of the industry, the market and the capitalization.

*The quarterly results for two years and the annual results for five years of the profits and losses.

5) A description of who needs to do what, and by when in order for the alternative agricultural enterprise to proceed as planned.

Fourth Step – Market Development

Unlike the markets for such things as corn, soybeans and honey, most alternative enterprise considerations operate in a relatively 'free market' system. This means, the price offered more accurately reflects the supply and the demand in the marketplace. This can result in greater fluctuations in market price.

Understanding what is happening in the market can allow a producer to:

1) Find market windows;

2) Target production so that product marketing occurs during optimal net income periods; and

3) Decide on whether to market a raw product or to develop a value-added specialized product.

Too often the time is not taken, when begining a new enterprise, to understand the market and to develop market outlets. It is often assumed that, when the product is ready, there will be a buyer. If market outlets have not been established producers who achieve excellent quality in their product will find that they may not be in any better position than producers who have poor product quality.

Producers who have not lined up a market in advance may be tempted to 'dump' their product in the market at a level far below market prices. This may be done in an effort to salvage some of their investment. It may be done in an attempt to "get their foot in the door" or to out do their competition. This is often characteristic of those who did not establish market outlets prior to production and those who have produced inferior products.

Offering inferior products in the marketplace develops a bad reputation for the producing area as a whole. It is generally difficult to convince buyers that a high quality product can be produced in an area different than their traditional suppliers. In addition, as previously mentioned, most alternative enterprises operate in a relatively 'free market' system. Large quantities offered at extremely low prices not only damage returns for the individual undertaking such action, but it will also bring down the market price for all producers. Such actions, therefore, result in far reaching negative impacts.

The development of marketing strategies is essential. It is not enough to know that markets exist. **Markets must be developed prior to production.** How to develop individualized marketing strategies will be addressed in Unit II of this manual.

Fifth Step–Implementation

There are two major problems that could be avoided during the implementation phase. They include:

1) Not following the plan; and
2) Not giving full time and effort to all of the selected enterprises.

The producer is most likely to loose sight of the plan during the implementation step. Producers who keep informed of both production factors and marketing factors throughout the implementation step will be likely to succeed. This means that as much or even more time should be spent on keeping track of information as on production itself.

Producers who keep good records will usually have the greatest success. Knowledge of past performance can be the best indicator for future performance. Records should be an accurate diary of costs and expenses. They should also track important and key information as it happens.

CROP RECORDS

1) The particular variety utilized. This information is necessary to discover which varieties will do best given certain soil types, climatic conditions, and production practices.
2) Fertilizer. The brand and the levels utilized.
3) Herbicide. The type, the number and timing of applications.
4) Seeding/planting density.
5) Tillage method and cultivation practices.
6) Weather conditions. This will assist in avoiding adjustments and/or elimination of overly optimistic or pessimistic future production forecasts.
7) Crop yields. Tracking this information will help in predicting future yields.

Timeliness factors and skill of the producer are also important characteristics to note, and whether there was any custom harvesting performed. Any conditions which affect the outcome of production should be recorded.

LIVESTOCK RECORDS

1) Where the livestock was obtained and its breed/genetic type. This will not only serve to trace disease problems but it can also be an indication of yield.
2) Feed amounts, vitamins and other supplements. Growth rates and gain performance can be calculated from this information.
3) Veterinary services.
4) Whether the animals were produced in an open environment or raised in buildings. For those in open environments, extreme heat, cold or drought conditions should be tracked.

5) The weight of animals should be recorded upon purchase and at time of sale.

6) Mortality rates and causes of death should be documented.

7) Any other unusual situations should be noted, such as pest or disease problems or long transportation distances.

Recordkeeping is complicated, but it must be maintained on both an annual and at least a per month or half month basis. Too often it is felt that information can be recorded at a more convenient time. Any information recorded is more useful and accurate if it is recorded during the time it is observed or experienced.

Recordkeeping for each enterprise may be difficult due to the overlap experienced between different enterprises. This makes it hard to clearly distinguish resource allocation. Even still, records can provide the producer with a valuable aid for determining the success of the year's performance, and for assisting in the development of future strategies.

Sixth Step–Evaluation

The usefullness of the producers evaluation will be highly dependent on the accuracy and completeness of records developed throughout the year. The records should provide the producer with the ability to determine:

1) The effects or ramifications from the year's activities and conditions;

2) The deviations made from the proposed plan; and

3) The degree of success achieved from the year.

This is a time to look backward and also to look ahead. Evaluating the actual results and making comparisons with what was expected, the producer will have the ability to readjust where estimates were off. This will allow for better future plans.

With an information base established over time the producer will be able to perform statistical analysis. Statistical analysis can further assist in maximizing the economic potential of the alternative enterprises, while minimizing business risk. There are various established analytical methods to help determine such things as:

1) The production results from utilizing varying amounts of resources;

2) The variability of yields

3) The variability of market prices;

4) The probability of various natural occurences (i.e., drought or early frost); and

5) The degree of production that should be pursued for each of the farm's enterprises given a minimum required overall farm income.

Summary

Diversification is a means of risk management. Even when following the six basic steps discussed above, a successful diversified farming operation does contain advantages and disadvantages.

ADVANTAGES:

1) The different enterprises are not usually damaged by the same negative conditions, both during production and at the time of marketing.

2) Maximum use of the farm's resources can be achieved without creating undue strain on such things as labor, management, or the farm's debt-to-equity ratio.

3) Timing of the farm's cash inflows and outflows can be balanced.

4) An acceptable overall farm income can be maintained, even though not all enterprises are profitable all of the time;

5) Risk is spread out more, thereby creating greater willingness of financial institutions to issue loans.

6) Many alternative enterprises operate in a consumer-oriented, market driven economy, which allows the producer greater choice.

DISADVANTAGES:

1) A greater amount of management time and expertise for coordinating the overall farming operation will be needed.

2) An instant solution to a farm crisis is not achieved.

3) The producer will need to be highly organized.

4) Crop specific capital investments are needed.

5) Time to develop production expertise and to maintain knowledge of up-to-date technologies is required.

6) Successful marketing expertise both in tracking market conditions and for establishing sales is needed.

7) The product needs to be competitive in both price and quality.

If a producer does decide to diversify, caution should be taken to insure that energy and attention are not divided among too many situations...taking on more than is physically possible.

In following a decision-making process prior to production, similar to the one presented here, an almost 'costless' way of discovering appropriate alternatives for an individual farm can be achieved. However, time and effort to develop such a strategy is needed.

Glossary Terms for Technical Information

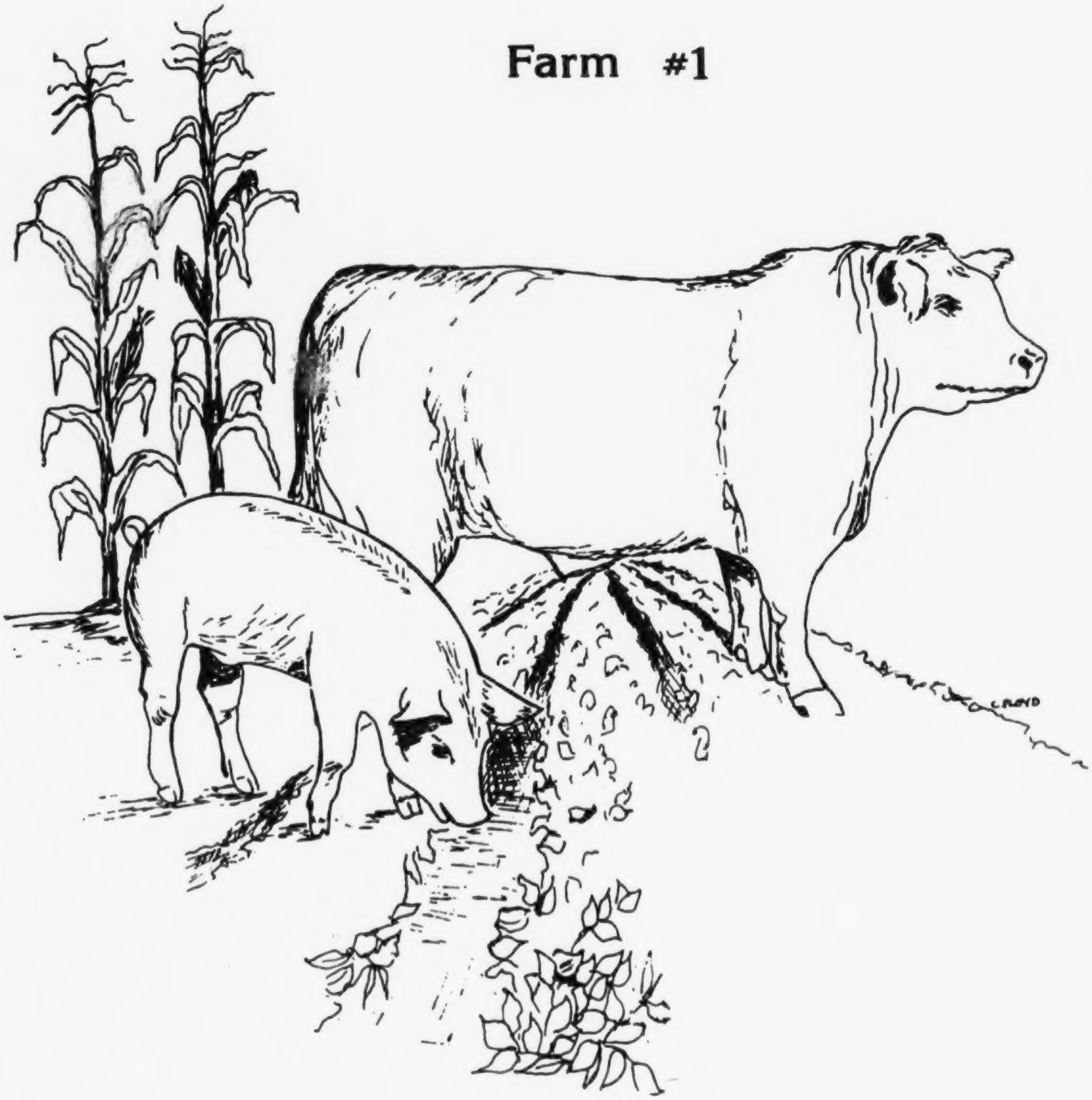
Value Added:
merchandise that has been processed from a raw product into one of greated worth in the marketplace. (i.e., wool into sweaters or strawberries into jams and jellies)

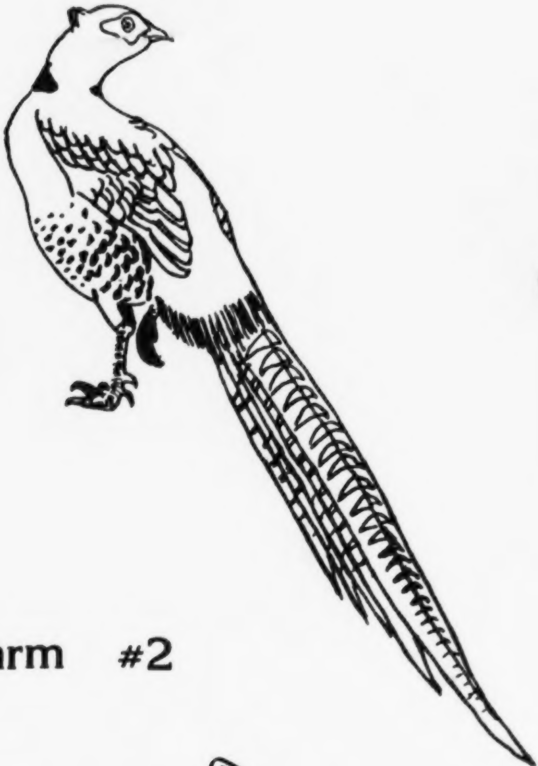
Market Windows:
specific and limited time periods in given market areas where supplies do not meet demand and prices are generally higher.

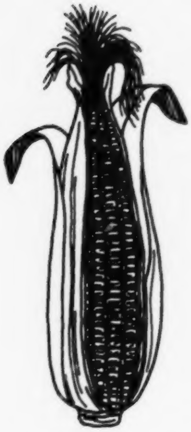
Notes:

Visual Masters
and
Activity Sheets

Farm #1







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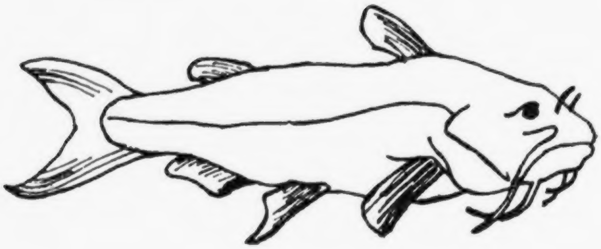

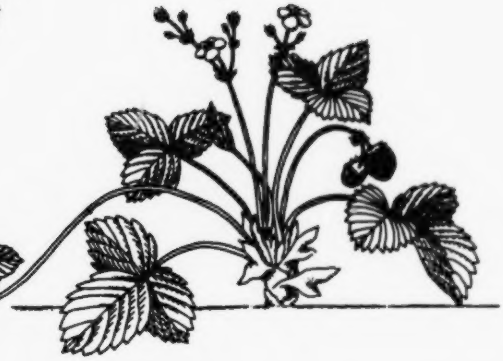

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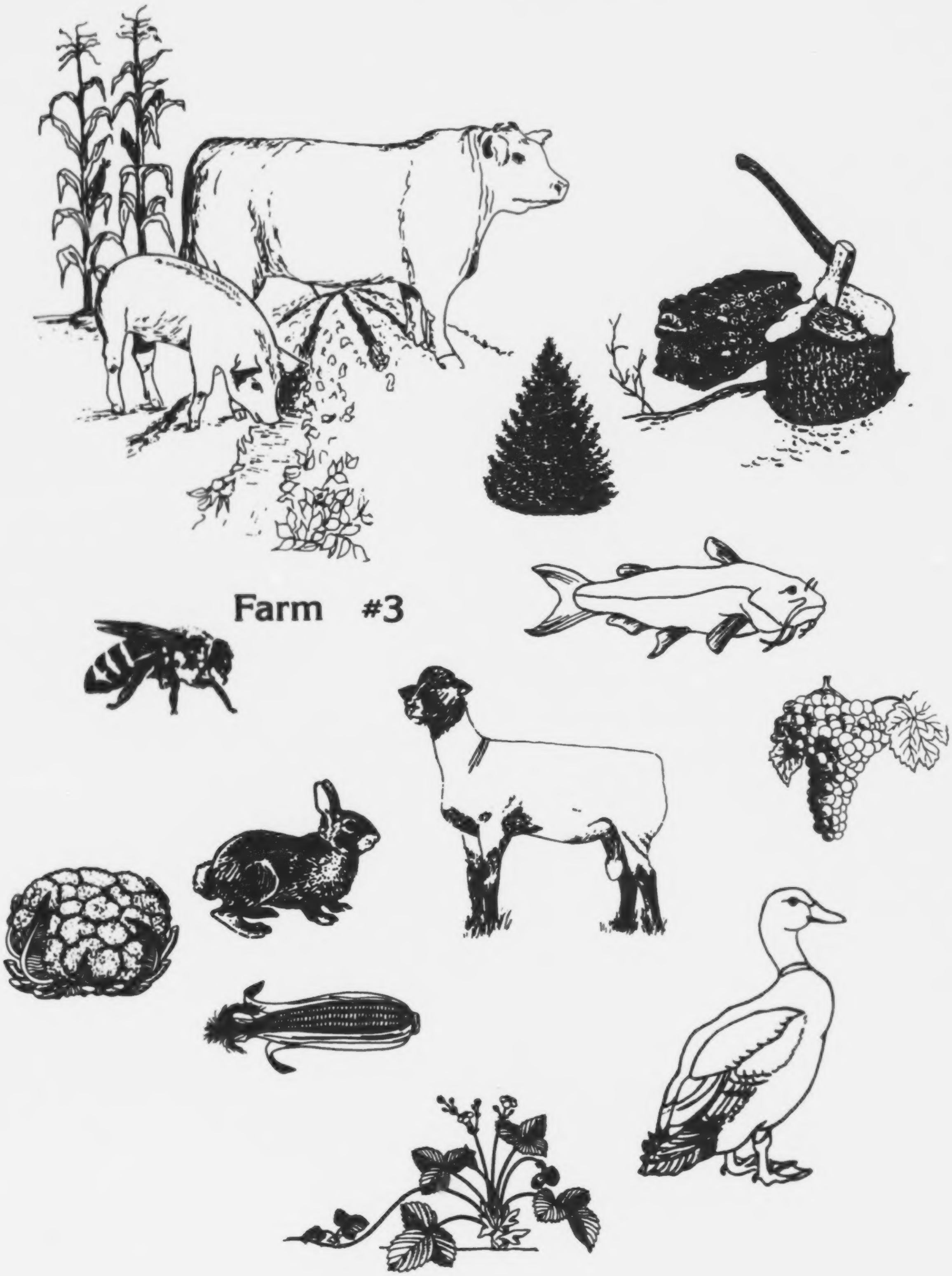


A DIVERSIFIED AGRICULTURAL PRODUCER WILL...

- LEARN TO PRODUCE GOODS AS CHEAPLY AS COMPETITORS.
- BECOME MORE ALERT THAN COMPETITORS TO CHANGING MARKET CONDITIONS AND MARKET OPPORTUNITIES.
- SHIFT AWAY FROM TOTAL INVOLVEMENT IN FEDERALLY CONTROLLED COMMODITY PRODUCTION.
- HAVE MORE INDIVIDUAL CHOICE ON WHAT TO PRODUCE, WHAT MARKETS TO TARGET, ETC.
- DEFER ADOPTING DECISIONS UNTIL FACTS ARE KNOWN.
- REALIZES THAT THE DIFFERENCES BETWEEN FARMS PROVIDES THE BEST OPPORTUNITIES FOR CREATING SUCCESSES.

- BE INNOVATIVE
- BE ADVENTUROUS
- BE OPEN-MINDED
- BE ANALYTICAL
- BE DECISIVE
- BE ORGANIZED
- BE FLEXIBLE

SIX STEPS TO DEVELOPING AND MAINTAINING A VIABLE DIVERSIFIED FARM

1) ANALYZE EXISTING CONDITIONS
2) IDEA FORMULATION AND ANALYSIS
3) PLAN SELECTION AND ANALYSIS
4) MARKET DEVELOPMENT
5) IMPLEMENTATION
6) EVALUATION

MAJOR SOURCES OF INFORMATION ON PRODUCTION AND MARKETING

PRODUCER ORGANIZATIONS

U.S.D.A.

STATE DEPARTMENTS OF AGRICULTURE

COOPERATIVE EXTENSION SERVICE/LAND GRANT UNIVERSITIES

COMMUNITY COLLEGES

NEIGHBORING PRODUCERS

MEDIA

PRIVATE CONSULTANTS

SUPPLY COMPANIES

TRIAL AND ERROR

INFORMATION NEEDS TO BE....

1) RELIABLE.

2) COMPLETE.

3) COME FROM AN APPROPRIATE SOURCE FOR BOTH THE PRODUCER'S INDIVIDUAL CIRCUMSTANCES AND FOR THE ENTERPRISE UNDER CONSIDERATION.

MAJOR CONDITIONS TO LOOK FOR WHEN EVALUATING EXISTING ON-FARM RESOURCES

1) RESOURCES THAT ARE NOT UTILIZED

2) RESOURCES WHICH COULD BE MORE EFFICIENTLY UTILIZED

3) RESOURCES IN WHICH THERE IS A WILLINGNESS TO REDIRECT

4) RESOURCES WHICH COULD BE REPLACED WITH SOMETHING MORE VERSATILE OR MORE EFFICIENT

EXISTING ON-FARM RESOURCES

LAND

HIRED LABOR

FAMILY LABOR

BUILDINGS

BREEDING STOCK

MACHINERY

NATURAL WATER RESOURCES

LIVESTOCK

LIVESTOCK PRODUCTS

HARVESTED CROPS

EQUITY AND SAVINGS

EQUIPMENT

RECEIVABLES

SUPPLIES: FERTILIZERS, SEED, PESTICIDES FEEDS, ETC.

EXISTING ON-FARM DEMANDS

FERTILIZERS

PESTICIDES

FUEL, OIL,
& GREASE

UTILITIES

LIVESTOCK

LOAN PAYMENTS:
PRINCIPAL & INTEREST

REPAIRS, IMPROVEMENTS,
& MAINTENANCE

BROKERAGE FEES

SEEDLINGS/SEED

DEPRECIATION

TAXES

RENT PAYMENTS

INSURANCE

LIVESTOCK FEED, &
SUPPLEMENTS

VETERINARY SERVICES
& MEDICATIONS

MISCELLANEOUS

DISCOVERY OF PRODUCTION FACTORS:

1) REQUIRED CLIMATIC CONDITIONS

2) REQUIRED SOIL CONDITIONS

3) WATER REQUIREMENTS

4) CHARACTERISTICS OF DIFFERENT VARIETIES/BREEDS

5) POTENTIAL PROBLEMS AREAS

6) PRODUCTION TECHNOLOGIES

7) LABOR REQUIREMENTS

8) EQUIPMENT REQUIREMENTS

9) BUILDING REQUIREMENTS

10) LAND AREA REQUIREMENTS

11) MANAGEMENT REQUIREMENTS

12) TIMING OF PRODUCT AVAILABILITY

DISCOVERY OF MARKET FACTORS:

1) EXTENT OF EXISTING MARKET DEMAND

2) MARKET CHANNEL OF INTEREST
   (direct to consumers, retailers, wholesalers, processors/manufacturers, export markets)

3) MARKETING EXPERTISE REQUIRED

4) MARKET SERVICING REQUIREMENTS

5) VOLUME OF DEMAND

6) PRODUCT QUALITY REQUIREMENTS

7) VARIABILITY OF MARKET PRICE

8) HANDLING REQUIREMENTS

9) INDIVIDUAL GEOGRAPHIC MARKET AREA

10) TYPE OF COMPETITION

A BUSINESS PLAN IS A DESCRIPTION OF WHY, HOW, AND WHEN AN ENTERPRISE WILL ACHIEVE A STATED LEVEL OF PRODUCTIVITY.

ELEMENTS OF A BUSINESS PLAN

1) A SHORT SUMMARY DESCRIBING THE TYPE OF ENTERPRISE.

2) WHY IT IS THOUGHT TO BE PROFITABLE...BASED ON:

---THE MARKET
---THE PRODUCT
---THE MEANS AND AREA OF DISTRIBUTION
---THE COMPETITION
---THE SALES

3) HOW IT WILL OPERATE TO BECOME AND STAY PROFITABLE

---THE KEY PERSONNEL
---THE ORGANIZATION
---THE MARKETING
---THE PRODUCTION
---ACCOUNTING CONTROLS

4) WHEN IT WILL REACH A STATED LEVEL OF PROFITABILITY

---THE CASH FLOW
---THE PRO FORMA BALANCE SHEETS

5) WHO NEEDS TO DO WHAT AND BY WHEN IN ORDER TO PROCEED AS PLANNED

LIVESTOCK RECORDS
(MOST RECORDS ARE MAINTAINED BY THE LOT OR BY THE HEAD)

NUMBER OF BREEDING STOCK

NUMBER OF OFFSPRING, BIRTH WEIGHT, & DATES

NUMBER SOLD, DATE, BUYER, WEIGHT & PRICE PER HEAD

MOTALITY RATE, CAUSE, & DATES

POUNDS OF FEED & SUPPLEMENT PER HEAD, DATES & SOURCE

NUMBER BOUGHT, TYPES, SOURCE, WEIGHT & DATES

ACRES OF LAND UTILIZED, & DATES

AMOUNT OF BUILDING SPACE UTILIZED, & DATES

AMOUNT & TIMING OF LABOR

QUANTITY OF LIVESTOCK PRODUCT PRODUCED, AMOUNT SOLD, PRICE, BUYER & DATES

VETERINARY EXPENSES, MEDICINE, PROBLEM, & DATES

EQUIPMENT COSTS

SUPPLIES, SOURCE & DATES

TRANSPORTATION COSTS

RATES OF GAIN

CROP RECORDS

(MOST RECORDS ARE MAINTAINED ON A PER ACRE BASIS)

VARIETIES UTILIZED, SOURCE, COSTS, AMOUNT & DATE PURCHASED

AMOUNT OF CUSTOM HIRE UTILIZED, DATES, & COST

YIELD PER ACRE & DATES

AMOUNT SOLD, PRICE, BUYER, & DATES

AMOUNT OF FERTILIZER & CHEMICALS PER ACRE, DATES APPLIED, & COSTS

CUBIC FEET OF IRRIGATION PER ACRE & DATES

MACHINERY COSTS PER ACRE, & DATES

AMOUNT OF LABOR PER ACRE, & DATES

EQUIPMENT COSTS & DATES UTILIZED

ADVANTAGES OF DIVERSIFICATION

1) DIFFERENT ENTERPRISES NOT USUALLY DAMAGED BY SAME NEGATIVE CONDITIONS DURING PRODUCTION AND MARKETING.
2) MAXIMUM USE OF THE FARM'S RESOURCES.
3) BALANCED TIMING OF THE FARM'S CASH INFLOWS AND OUTFLOWS.
4) AN ACCEPTABLE OVERALL FARM INCOME CAN BE MAINTAINED.
5) RISK IS SPREAD OUT MORE.
6) ALLOWS THE PRODUCER GREATER CHOICE IN BOTH PRODUCTION AND MARKETING.

DISADVANTAGES OF DIVERSIFICATION

1) GREATER AMOUNT OF MANAGEMENT TIME AND EXPERTISE NEEDED.
2) NOT AN INSTANT SOLUTION TO A FARM CRISIS.
3) THE PRODUCER WILL NEED TO BE HIGHLY ORGANIZED.
4) CROP SPECIFIC CAPITAL INVESTMENTS ARE NEEDED.
5) TIME IS REQUIRED TO DEVELOP PRODUCTION EXPERTISE AND TO MAINTAIN KNOWLEDGE OF UP-TO-DATE TECHNOLOGIES.
6) SUCCESSFUL MARKETING EXPERITSE IS NEEDED FOR TRACKING MARKET CONDITIONS AND FOR ESTABLISHING SALES.

7) THE PRODUCT NEEDS TO BE COMPETITIVE IN BOTH PRICE AND QUALITY.

WHAT CAN BE PRODUCED ????

There are hundreds of agricultural products that can be produced. Unscramble the the following to reveal a few products.

1. **THAASPEN** (A Domesticated Game Bird) ______________________
2. **ROLCIBCO** (A Vegetable) ______________________
3. **SCTIHAF** (A Fish) ______________________
4. **EODFRIOW** (An Energy Source) ______________________
5. **SHIMACRTS REET** (A Holiday Evergreen) ______________________
6. **WEFORSL** (Colorful Ornamentals) ______________________
7. **FUTR** (Outdoor Carpeting) ______________________
8. **BACERM** (An Alternative Small Grain) ______________________
9. **WARSETBRIERS** (A Fruit) ______________________
10. **SUNT** (Edible Hard-Shelled Seeds) ______________________
11. **BATSRIB** (Fur and Meat Products) ______________________
12. **ERTES & BRUSHS** (Landscaping Materials) ______________________
13. **KURTYES** (Holiday Birds) ______________________

WHAT CAN BE PRODUCED ????
(ANSWER SHEET)

There are hundreds of agricultural products that can be produced. Unscramble the the following to reveal a few products.

1. **THAASPEN** (A Domesticated Game Bird)	PHEASANT
2. **ROLCIBCO** (A Vegetable)	BROCCOLI
3. **SCTIHAF** (A Fish)	CATFISH
4. **EODFRIOW** (An Energy Source)	FIREWOOD
5. **SHIMACRTS REET** (A Holiday Evergreen)	CHRISTMAS TREE
6. **WEFORSL** (Colorful Ornamentals)	FLOWERS
7. **FUTR** (Outdoor Carpeting)	TURF
8. **BACERM** (An Alternative Small Grain)	CRAMBE
9. **WARSETBRIERS** (A Fruit)	STRAWBERRIES
10. **SUNT** (Edible Hard-Shelled Seeds)	NUTS
11. **BATSRIB** (Fur and Meat Products)	RABBITS
12. **ERTES & BRUSHS** (Landscaping Materials)	TREES & SHRUBS
13. **KURTYES** (Holiday Birds)	TURKEYS

EXISTING RESOURCES INVENTORY

LAND:

Soil Type:________________________ Number of Acres______________

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Soil Type:________________________ Number of Acres______________

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Soil Type:________________________ Number of Acres______________

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

EQUIPMENT/MACHINERY:

Type:____

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

Type:____

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

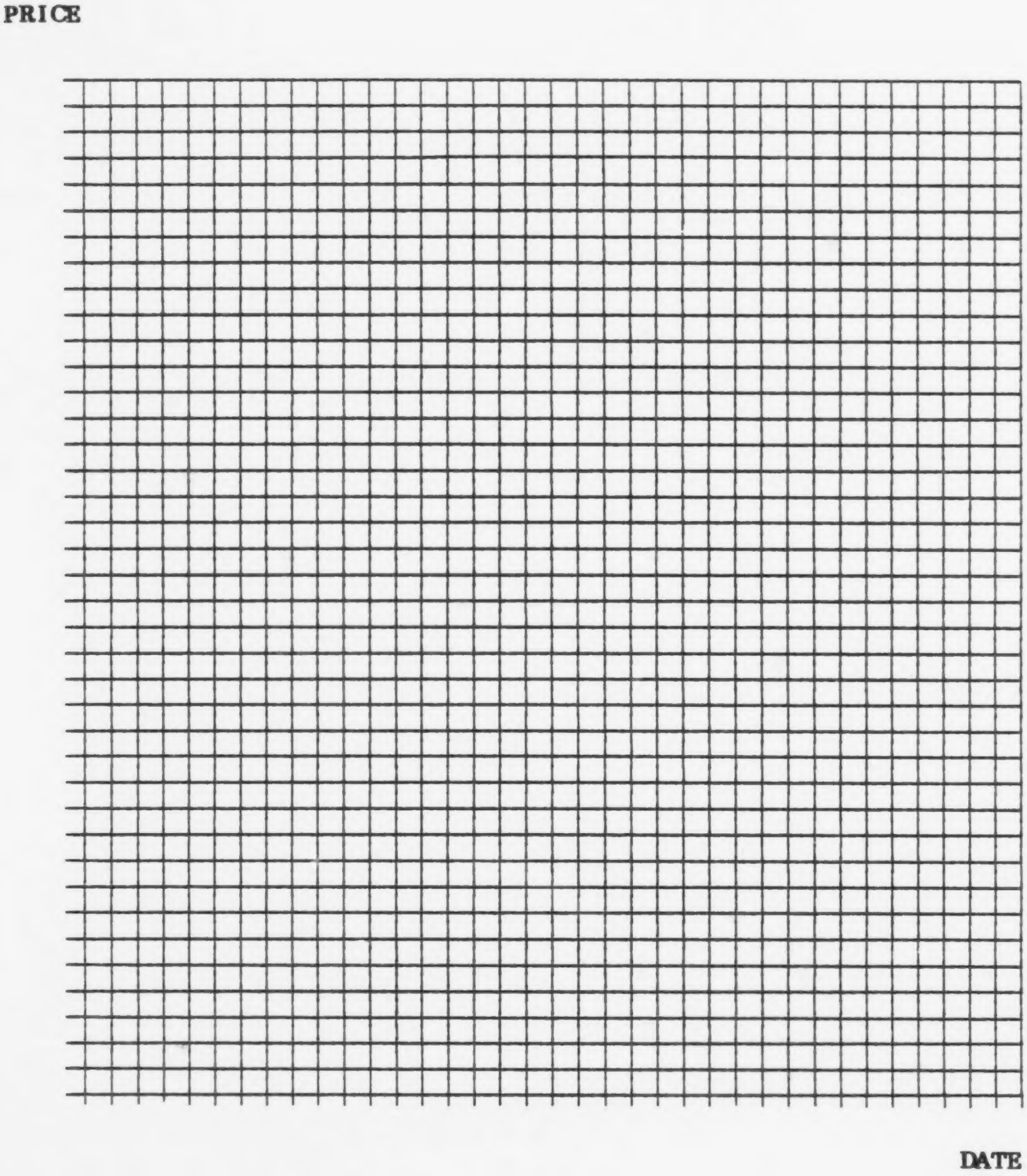
Type:____

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

KEY: ■ Not available ◪ Partially available ☐ Totally available

TRACKING PRICES

CROP:____



PRICE DATA SHEET

DATE	BROCCOLI	SWEET CORN	SWEET PEPPERS
5/1	$10.00	----	$18.00
5/2	10.00	$16.00	17.00
5/3	10.00	14.00	14.00
5/6	10.00	17.00	12.00
5/7	10.00	16.00	13.00
5/8	9.00	16.00	10.00
5/9	9.00	14.00	10.00
5/12	8.00	12.00	10.00
5/14	8.00	10.00	9.00
5/15	8.50	9.50	8.00
5/16	8.50	9.50	8.00
5/19	9.00	9.00	8.00
5/20	9.00	9.00	8.00
5/21	10.00	8.50	8.00
5/22	10.00	8.50	8.00
5/23	9.50	8.50	10.00
5/27	9.50	8.00	10.00
5/28	9.00	8.00	9.00
5/29	9.00	8.00	9.00
5/30	9.00	7.00	9.00

DATE	BROCCOLI	SWEET CORN	SWEET PEPPERS
6/2	$ 9.00	$ 7.50	$ 9.00
6/3	8.50	7.50	8.00
6/4	8.50	7.50	8.00
6/5	8.50	8.00	8.00
6/6	8.50	8.00	8.00
6/9	8.00	8.00	9.00
6/10	6.00	8.00	10.00
6/11	6.00	8.00	11.50
6/12	6.00	8.00	12.00
6/13	6.00	7.50	12.00
6/16	8.00	7.50	12.00
6/17	8.00	7.50	12.00
6/18	9.00	7.50	10.00
6/19	9.00	7.00	11.00
6/20	9.00	7.00	11.00
6/23	8.00	7.00	11.00
6/24	8.00	7.00	11.00
6/25	8.00	7.00	11.00
6/26	8.00	8.00	13.00
6/27	8.00	8.00	13.00
6/30	8.00	8.50	13.00

DATE	BROCCOLI	SWEET CORN	SWEET PEPPERS
7/1	$8.00	$8.50	$12.00
7/2	8.00	8.50	15.00
7/3	8.00	8.00	15.00
7/7	8.00	9.00	14.00
7/8	8.00	9.00	14.00
7/9	8.00	9.00	13.00
7/10	8.00	9.00	12.00
7/11	8.00	9.00	12.00
7/15	8.50	8.00	12.00
7/18	8.50	7.50	12.00
7/21	8.50	6.00	12.00
7/22	8.50	6.00	12.00
7/23	8.50	6.00	11.00
7/24	8.50	6.00	11.00
7/25	8.50	5.00	11.00
7/28	8.50	5.00	11.00
7/29	8.50	5.00	11.00
7/30	8.50	5.00	10.00
7/31	8.50	5.00	10.00

DATE	BROCCOLI	SWEET CORN	SWEET PEPPERS
8/1	$8.50	$5.00	$ 9.00
8/4	8.50	5.00	8.50
8/5	8.50	5.00	8.50
8/6	8.50	4.00	8.00
8/7	8.50	6.00	8.00
8/8	8.00	6.00	9.00
9/11	8.00	5.50	10.00
8/12	8.00	5.50	10.00
8/13	8.00	5.00	9.00
8/14	8.00	5.00	8.00
8/15	8.00	5.00	8.00
8/18	8.00	5.00	7.00
8/19	8.00	5.00	7.00
8/20	8.00	5.00	7.00
8/21	7.50	6.00	7.00
8/22	7.50	7.00	6.50
8/25	7.00	6.00	6.50
8/26	7.00	6.00	6.00
8/27	7.00	7.00	6.00
8/28	8.00	6.00	6.00
8/29	8.00	6.00	7.00

BROCCOLI: cartons of 14 bunches
SWEET CORN: cartons/wirebound crates of 4-1/2 dozen
SWEET PEPPERS: larges in 1-1/9 bushel crates

TO DO OR NOT TO DO ???

This unit of study presented agricultural diversification. List four advantages and four disadvantages of using this method.

ADVANTAGES:

1.

2.

3.

4.

DISADVANTAGES:

1.

2.

3.

4.

TO DO OR NOT TO DO ???
(ANSWER SHEET)

This unit of study presented agricultural diversification. List four advantages and four disadvantages of using this method.

ADVANTAGES:

1. The different enterprises are not usually damaged by the same negative conditions during production and marketing.
2. Maximum use is made of the farm's resources.
3. There is a balanced timing of the farm's cash inflows and outflows.
4. An acceptable overall farm income can be maintained.
5. Risk is more spread out.
6. The producer is allowed greater choice in both production and marketing.

DISADVANTAGES:

1. A Greater amount of management time and expertise is needed.
2. It is not an instant solution to a farm crisis.
3. The producer will need to be highly organized.
4. Crop specific capital investments are needed.
5. Time is required to develop production expertise and to maintain knowledge of up-to-date technologies.
6. Marketing expertise is needed for tracking market conditions and for establishing sales.
7. The product needs to be competitive in both price and quality.

SIX STEPS

This unit of study presented six steps for establishing and implementing a diversified farm plan. List each of the six steps and explain the importance of each step.

FIRST STEP:

SECOND STEP:

THIRD STEP:

FOURTH STEP:

FIFTH STEP:

SIXTH STEP:

SIX STEPS
(ANSWER SHEET)

This unit of study presented six steps for establishing and implementing a diversified farm plan. List each of the six steps and explain the importance of each step.

FIRST STEP: ANALYSIS OF EXISTING CONDITIONS

- Identifies resources: 1) not utilized, 2) inefficiently utilized, 3) willingness to redirect, and 4) out-dated.
- Evaluates the value of existing resources.
- Determines the ability of the farm to take on alternative enterprises, considering time and resource constraints.
- Outlines the basic production conditions of the farm.
- Evaluates the producer's own personnel objectives.

SECOND STEP: IDEA FORMULATION AND ANALYSIS

- Builds a reliable, complete, and appropriate base of information on the alternatives under consideration.
- Establishes a knowledge of specific production factors: 1) required environmental conditions, 2) production steps, 3) available technologies, 4) costs of production, 5) time tables, and 6) potential problems.
- Establishes a knowledge of specific marketing factors: 1) level of product demand, 2) targets market channel(s), 3) market prices and variability, 4) scope of market area, and 5) understanding the competition.

THIRD STEP: PLAN SELECTION AND DEVELOPMENT

- Compares existing farm demands with alternative enterprise demands.
- Determines which of the selected alternatives should or should not be undertaken.
- Determines which alternatives will or will not act as a management strategy for minimizing the risk of great fluctuation in the overall farm income.
- Develop a business plan for guiding the producer and for presenting information to any potential financial lender/investor.

FOURTH STEP: MARKET DEVELOPMENT

- Establishes market outlets for product prior to production.
- Determines the specifications of the potential buyer(s).
- Establishes a relationship with potential buyer(s).

FIFTH STEP IMPLEMENTATION

- Following the outlined plan.
- Develops a base of information for assisting in the development of future strategies.

SIXTH STEP: EVALUATION

- Determines the ramifications from the year's activities and conditions.
- Recognizes the deviations made from the proposed plan.
- Determines the degree of success achieved from the year's performance.

Market Development

Objectives

Upon completion of Unit II, the student will be able to:

1) Describe the advantages and disadvantages of selling to the four marketing channels.

2) List and describe the importance of the four major considerations in the development of a marketing strategy.

3) List eight principles of a good personal sales strategy.

4) Identify and describe the five factors that constitute a valid contract.

5) Compare written and oral contracts of sale.

6) State the three basic ways to increase customers

Materials Needed

Ice cubes
Ice bucket
Four numbered containers
Large volume of product to sell

Visual Masters

VM-MS-1	Manufacturers
VM-MS-2	Wholesalers
VM-MS-3	Retailers
VM-MS-4	Direct to Consumers
VM-MS-5	Developing Marketing Strategies
VM-MS-6	Personal Sales Strategies
VM-MS-7	Contracts
VM-MS-8	Increasing Customers

Activities

ACT-MS-1	Name tags
ACT-MS-2	Marketing Variables
ACT-MS-2A	(Page 2)
ACT-MS-3	The Interview
ACT-MS-4	The K.Y.P.'s
ACT-MS-5	Word Scramble
ACT-MS-5A	(Answer Sheet)

Interest Approach

a. Ask for seven students to volunteer to become participants in marketing a product.

b. Give each student a name tag to signify the part they will play (Use ACT-MS-1).

c. Have them stand along opposite walls in the classroom in the manner illustrated on the activity sheet.

d. Place an ice cube in the hand of Producer #1. Count slowly to ten. Instruct the person to walk to the Shipper and place the ice cube in his/her hand. Again, count slowly to ten....repeat for each.

e. When the ice cube reaches the retailer, have an additional fresh ice cube placed in the hand of Producer #2. Count to ten. Both ice cubes should then be delivered to the Consumer at the same time.

f. Instruct the class to observe and compare the two ice cubes.

g. Explain to the class how the experiment represents what happens to a product that traverses the total marketing chain, as compared to a product that is sold by the producer directly to the consumer. Examples of:

   1) degraded product quality, and

   2) what happens to the producer's profits as each member of the marketing chain has his/her hands on the product.

Teaching Procedures

1) List the four different marketing channels. Present details on each. (Use VM-MS-1 through VM-MS-4)

2) a. Present to the class the considerations that need to be made when developing a marketing strategy. (Use VM-MS-5)

   b. Divide the students into five groups. Instruct each group to select one variable from each of the five containers (use ACT-MS-2) and develop an appropriate market channel based on their own specific variables. In their presentation to the class have them provide reasons for their choice.

3) a. Discuss the importance of market research prior to production. Divide the class into groups and instruct them to select a product and to conduct interviews with possible buyers (use ACT-MS-3).

4) a. Discuss the manner in which an individual presents a product and him/herself directly related to the success of a sales effort. (Use VM-MS-6)

   b. Divide the class into three or four person groups. Instruct each group to complete ACT-MS-4 and then prepare a sale presentation of a product of their choice.

   c. Have a representative from each group give a sales presentation to the entire class. After each presentation, ask for suggestions on ideas which might enhance the sales presentation even more.

5) Discuss sales agreements and contracts (use VM-MS-7). Invite a lawyer to visit the class and discuss the legal aspects of establishing and finalizing a sale.

6) a. Introduce the three basic methods for increasing the number of customers (use VM-MS-8).

   b. Work with the class to determine a product to sell over a four week period. During the first week conduct a cold canvass of the market area. During the next two weeks, make follow-up contacts with buyers and ask for names of others who might be interested in purchasing the product. At the end of the marketing period, determine the effectiveness of each approach.

7) a. Instruct the students to complete activity sheet ACT-MS-5 within a specified time period.

   b. Discuss with the students their feeling towards undertaking the sales effort themselves.

Extra Suggested Activities

1) Plan a sales contest.

2) Invite a buyer/broker to the class to discuss how to establish a trade relationship between a producer and a buyer.

3) Tour a processing, a wholesaling, and a retailing establishment which purchases an alternative agricultural product.

4) Invite a local salesperson of the year to visit and discuss sales strategies and techniques.

5) View a film on sales.

6) Instruct the student to contact three different places that sell the same product, listen to their sales approach, and develop a written critique of each.

7) Invite producers of alternative agricultural products to present their individual marketing strategies to the class. Include producers who represent u-pick sales, farmers market vendor, sales to retailers, sales to processors, and sales to wholesalers.

8) Instruct the students to select and read a book on sales, and to write a review of the strategies presented.

9) Develop a marketing plan for a local producer based on the product(s) offered, the individual's traits and marketing expectations.

Suggested References

Bonoma, T.V. 1985. The Marketing Edge—Making Strategies Work. The Free Press. New York, New York.

Crissy, W.J.E., and R.M. Kaplan. 1967. Salesmanship. John Wiley and Sons, Inc. New York, New York.

Haas, K.B., and J.W. Ernest. 1969. Creative Salesmanship: Understanding Essentials. Glencoe Press. Beverly Hills, California.

Levinson, J.C. 1984. Guerilla Marketing. Houghton Mifflin Company. Boston, Massachusetts

Overcoming Objections. CRM Productions-Contemporary Films. 1983. 17 minute color film.

Take Care. American Media, Inc. 1982. 25 minute color film.

Technical Information

Introduction

Marketing activities have two unique features. First, marketing is the revenue generating function of a production system. All other functions of the operation are supported by how well marketing is done. This is because the marketing of a product is what touches the end user of a product. Second, securing and servicing the customer is the central business purpose of any enterprise.

These two unique features bay be totally foreign to the way individual producers of traditional grain crops look at how revenue is generated. Marketing activities are often the most difficult aspects of new alternative enterprise development. In taking on this responsibility, the producer will need to explore three areas of marketing:

1) Discovering marketing channel options.

2) Developing a marketing approach. and

3) Establishing the sale.

Discovering Marketing Channel Options

There are four basic channels for marketing products. These include selling to manufacturers, wholesalers, retailers, or consumers. It is up to the producer to select one or more of these marketing channels and then to be prepared to take advantage of the one(s)) that offers the greatest advantage.

SALES TO MANUFACTURERS

A manufacturer is a company who accepts raw or semi-processed goods, and further processes them for distribution to other market outlets. Examples of manufacturing include; corn into sweeteners, raw vegetables into stew, fur into coats. The list is nearly limitless.

In general, supplying a manufacturer with raw goods is often perceived to be the most attractive method for producers. The bulk of midwestern agricultural production is handled in this fashion. The interest in this marketing channel comes from the manufacturer's constant need to be supplied with large volumes of product. Therefore, once established as a good source of product, the producer can continue selling to a manufacturer. However, new producers must be aware that there is a set number of suppliers and limited product need. In addition, there is also a sense that the producer is at less risk. Most manufacturers contract with producers prior to production in order to secure a minimum amount of product. Therefore, the producer enters the production season with a firm knowledge of the revenues which can be generated. With a contract established, little concern may be given further marketing efforts. However, growing on contract generally means lower per unit prices and compliance with rigid product specifications.

Selling to a manufacturer may be preferred. If the producer does not have the time or marketing expertise needed for the other three marketing channels. There are specific times for negotiating sales with manufacturing outlets. There are usually fewer manufacturing outlets than the number of outlets found in the other marketing channels. Generally, manufacturing plants are strategically located in areas where labor is less expensive or where transportation costs for raw products or finished products are lower.

SALES TO WHOLESALERS

Wholesaling is the sale of commodities which will be resold. Wholesaling tends to be attractive to producers who desire medium or large volume sales. Oral contracts are utilized to establish a sale with a wholesaler. New producers, interested in wholesaling, often have a difficult time gaining access to wholesale markets. This may be due to the tight network of suppliers and buyers who have established relationships.

Wholesalers are generally located geographically closer to the end user of the product than are manufacturers. Wholesalers also often serve as regional distribution centers. There may be a limited number of wholesale outlets available. This may be especially true in low population areas where one wholesaler might service a large geographic area.

Wholesalers require consistent regular supplies. They must also maintain a certain volume of merchandise. This merchandise must be total turned over within a relatively short period of time. Just like manufacturers, large volume sales can be established with wholesalers, at a lower per unit price than at the retail level.

SALES TO RETAILERS

Retailers are merchants who buy wholesale products for sell to the end user. Selling directly to a retailer can be beneficial to the small producer whose product is in high demand and the supply limited. However, selling to the retailer may take more of the producer's time. This is because the producer is carrying out the functions of a wholesaler. The end result is a decrease in the time available for production tasks. This can be due to:

1) The frequency of deliveries required of each client.

2) The greater number of clients necessary in order to sell an equal volume of product which would satisfy one wholesaler.

3) It may be that specialized packaging/product refinement will be required for each retail outlet.

A major disadvantage of selling to retail outlets is that the producer must rely on the retailer's ability to sell the product. The producer should find out what other competing products the retailer offers and ask the following questions. How much will the retailer promote my product? How will the retailer display my product? Where will the retailer *display my product? These questions* should be asked in comparison to competing products.

There may also be a benefit realized from selling directly to retailers. The producer has the opportunity to capture a greater share of the price ultimately paid by the consumer.

SALES TO CONSUMERS

Direst-to-consumer marketing may be defined as producers who act as retailers for all or part of their products. There are two different approaches that can be taken. First, a marketing-oriented business can be developed which usually is not seasonal, offers a broader product line, and is conveniently located for the consumer population. Or second, a production-oriented business can be established which is open on a seasonal basis, and caters to customers who buy large amounts of product, but return less frequently than with the marketing-oriented business.

Producers who sells directly to consumers often assume that all profits will end up in their hands. The producer however must carry on all functions in the product's path to the consumer—production, product refinement, packaging, transportation, advertising, and sales.

When functioning as a retailer, the producer can either plan sales at the production site or obtain retail space within a commercial business district.

The benefits of having an on-site market outlet are:

1) Transportation costs are reduced or eliminated.

2) Customers are included in some or all of the harvesting practices.

3) Other functions can be carried out by the producer, as well as other employees, when not directly involved with sales.

The disadvantages of on-site sales include:

1) Customers sporadically interrupting other duties/responsibilities.

2) Customers damaging products in various stages of production.

3) The added facilities necessary to care for the public's needs.

4) The negative effects that weather conditions can have on customer traffic (extremely hot, cold or wet conditions).

An on-site sales system also requires the producer to understand what motivates the public to come to a site. It also requires knowledge in the area of advertising. One of the major failures of many on-site sales system is the lack of adequate customer traffic. A producer must plan to spend time and money on attracting customers. The cost of attracting customers should be figured into the asking price for the product(s)). If promotions and advertising is ignored or only given slight attention, problems often arise.

The location of the production site is a critical factor for determining whether or not to develop an on-site sales facility. If the farm location is hard to find or too far away, attracting buyers will be difficult. In either case, if the producer still wants to act as a retailer consideration should be given to locating in a retail business district. Care should taken to choose a site with good customer traffic. This will help provide the opportunity to attain the required sales volumes. This approach will require:

1) A definite separation of time allocation for production and sales.

2) An increase in transportation costs.

3) An increase in overhead costs due to those associated with such a facility.

Regardless of which marketing system is chosen, a detailed plan of coordination for the direst-to-consumer sale will be required. It will also require the individual producer to maintain a high level of expertise in many different areas, or it will necessitate the hiring of employees with the appropriate skills.

A new producer can also benefit greatly by direct sales for several reasons:

1) Smaller volumes can be sold with a potential for a higher return than with other marketing channels.

2) It provides the producer with the opportunity to gain direct insight as to what the end user expects of a particular product.

3) It gives the producer more control over the marketing of a product than with any other system.

Regardless of the market channel selected, marketing expertise is required to successfully sell a product. Whether marketing a product to a manufacturer, wholesaler, retailer, or the consumer, producers must have confidence in their products. Producers must be able to convince purchasers/buyers that there is a benefit to doing business with them rather than with the buyer's existing suppliers.

Developing A Marketing Approach

A thorough knowledge of the market outlets available and the producer's ability to meet or exceed the requirements of those outlets are important in developing a sales strategy. This will hold true regardless of which marketing channel is chosen. In developing a marketing strategy, a producer must understand:

1) The amount of his/her time available for the marketing function.

2) The scope of a viable service area.

3) How to deal with the competition that exists.

4) Specifications/ requirements of the buyers.

TIME

When analyzing which marketing strategy will be used for selling a product, the producer must estimate the time available for marketing efforts. On paper, every producer can estimate the amount of time already obligated to existing functions, and outline the estimated time required for the production of the proposed enterprise(s)). When this is complete, blocks of available time for marketing will be apparent.

A new enterprise will often demand more time initially in all phases of production and marketing. However, over the years as expertise is developed, methods refined, and markets established, efficiencies should be realized.

SCOPE OF SERVICE AREA

There are two concepts of service area which need to be considered by the producer when developing a marketing strategy:

1) Where along the marketing chain a producer chooses to sell.

2) The service area a producer can profitably transport product.

As previously mentioned, the further away from the ultimate end user of the product, the smaller the percentage of the total profit returned to the producer. In other words, the producer should realize a higher return per unit by selling directly to the consumer, rather than selling to a wholesaler.

There is a variation in determining the service area, which will require a judgment on an outlet by outlet basis. In some cases a producer, by averaging out the entire marketing year, can find that there is an overall net gain realized from continually servicing a certain outlet even though on some deliveries will be at a loss. This is important to consider since the establishment of regular clientele is essential to marketing successes. The overall net affects can provide a better understanding of whether sales to a particular outlet should be maintained or abandoned.

Product delivery can be both a drain on labor supply as well as on net income if not carefully calculated. Different marketing channels exhibit extremes in the delivery requirements and must be carefully analyzed. Variations can include frequency of deliveries and distances to and between outlets. Checks should also be made regarding transportation regulations and insurance requirements. Compliance with these regulations can increase the producer's costs.

The benefits of distance should be determined from the consumer's perspective. Limited research has been conducted by various universities to determine the number of consumers that will travel to a farm to buy specific products. These geographically specific figures are based on area population, radiating distances, and the type of agricultural product(s)) offered. If utilized, caution should be exercised as these figures are averages based on current trends. They are not necessarily what will actually be experienced by the individual producer.

COMPETITION

Competition occurs when two or more

sellers act independently to secure and maintain the business of a buyer, by offering the most favorable terms. No matter what the product is, competition will play a key role in marketing the product.

There are three basic principles regarding competition that can either work for or against the producer

1) Competition will always exist. Money will be spent on purchases. If producers do not make buyers/customers aware that they have products available for them to purchase, they will spend their money elsewhere.

2) Purchasers forget fast. Buyers are bombarded with messages as to what they should buy. Delivering these messages is extremely important, as studies have shown that it takes only six weeks for a person to forget the product/service benefits outlined in a sales message. If the purchaser does not hear from the seller, repeated at timely intervals, the door is left open for the competition.

3) Hold on to old customers. Most businesses survive on repeat and referral business. If old customers do not hear from the producer or about the producer, buyers tend to forget they exist or feel that they are no longer interested in making a sale, thus the door is opened for competitors.

Some businesses are known to reduce their marketing efforts when economic times are tough or when they became too comfortable with the success of their current situation. Becoming relaxed in marketing efforts at these times, may mean ultimate failure. However, these same situations can provide an opportunity for a new producer to take some of the established business's customers away. In competi-tive situations there are winners and losers.

In preparation for undertaking a new enterprise, a producer should know the advantages, if any, s/he has over the competition. The product may have to be either superior in quality, or be produced in a location and by methods which make the product more competitive than what is offered by existing suppliers. An example would be the current trend towards regional food production due to the high cost of transportation, making traditional and distant producing area less competitive on overall price. A producer may invest a great deal of money which can be lost if the extent of the competition is not known.

SPECIFICATIONS AND REQUIREMENTS

No matter which outlet is chosen, there will always be certain conditions placed on product quality, quantity, and possibly variety, as well as delivery and types of packaging. It is imperative to find out what the minimum acceptable requirements are and then to take appropriate action to assure delivery under such provisions.

The quality of a product will be a major determinate in marketing. In order to be a successful merchandiser, the producer must be totally objective in meeting the requirements of the customer. Often producers try to pass off lower quality products. They convince themselves that their product does in fact meet the minimum standards. They do not want to admit the quality of their product is substandard.

Many new producers often observe what is offered at retail outlets in order to determine product specifications. This can be an effective approach for some items, but it can be detrimental when dealing with perishable products. The new producer should not allow the quality of product displayed in a retail store to be the guide for their quality standard. Such observations do not take into account the handling and storage time necessitated by these outlets in order to provide continual supplies for their customers.

In order to insure that quality products are offered, which meet the specifications demanded by the industry, a new producer may have to use one of the following approaches.

1) In order to maintain sufficient volume of quality product for meeting a buyer's demand, the new producer may have to produce more than is necessary for filling orders. Since inexperience is going to present problems in initial production efforts, excess production will give a larger pool of product from which to grade out quality product for the market.

2) If the producer is unable to make a clear distinction between the quality requirements of the market place and the attachment associated with all products produced, then a clear separation between the marketing operation and the production operation should be made. This will require different personnel being responsible for the two different areas. Major problems will occur if it is assumed that all products, regardless of quality, can be sold.

In addition to determining product quality standards, the new producer should find out if there are any specific product varieties or special product handling procedures required by the targeted buyer's). Too often it is assumed, by new producers of perishable food products, that product can be sold to manufacturers for that portion of their production which does not meet fresh market standards. This is a major fallacy, as varieties demanded by the fresh market and processing market can vary greatly depending on the item.

Also special handling procedures may be required. These can include requiring the producer to undertake techniques for extending product life, special packaging, or refinement of the raw product. These requirements can vary greatly depending on the marketing channel selected and the individual marketing outlet. For example, packaging requirements can vary from buyer to buyer. Manufacturers generally receive all products in bulk form. Wholesalers receive product in both bulk and large container sized packaging. Retailers receive product in bulk, large container sized packaging, and consumer sized packaging. The type of packaging demanded depends on the particular product and how the buyer offers the product to the customers. The producer's knowledge and implementation of product handling procedures will determine the acceptance of and price offered for the product by the buyer.

Initially a new producer probably will not be allowed to serve as a primary supplier to a buyer. The producer will have to prove that their product meets the requirements and specifications of the buyer and the volume demanded can be consistently delivered. An outlet cannot afford to give up existing suppliers if a new provider cannot meet the necessary obligations. Therefore, every effort should be made to meet or exceed the best offerings in the market...Once given the chance to sell to a buyer, the customer should be kept content so that purchasing will continue.

MARKET RESEARCH

The new enterprise producer may not be in a position to invest large sums of money for market research. Therefore, the producer will have to know what to look for and where to find it. Crucial information must be obtained for as little investment as possible. There are various sources available for finding the answers to marketing questions. The reference section of a library offers publications with information on public acceptance of products, consumer trends, why people buy, and demographic data on the targeted service area. Producers and producer groups may also provide first hand knowledge about various marketing approaches.

An often over looked source of information is the buyer. A carefully worded questionnaire can be developed which asks potential buyers what they want out of a product. Questions may include such things as:

1) Where do existing supplies come from?

2) What problems, if any, exist with current supplies/suppliers?

3) What is the existing method of packaging the product?

4) What is the current volume supplied to the outlet?

5) What is the minimum quantity acceptable to the outlet?

6) How often is the particular product received?

7) What quality characteristics are required?

8) What services are currently provided for by existing suppliers?

9) What will it take to become a regular supplier to the outlet?

A survey can then be conducted either through personal interviews or through mail correspondence. Caution needs to be taken as to the wording utilized during the asking of questions or in the recording of answers received. A slant or bias in either can result in unreliable findings. After gathering as much information as is felt necessary, the producer will have a good base on which to develop a sales strategy for marketing the new product(s)). The producer will also be able to determine if the product can be furnished under the specification and requirements necessary for acceptance.

In formulating the actual marketing plan, the producer should answer the following questions:

1) Who are the best prospects for buying the product?

2) What is the purchasing power of the buyers?

3) How far away are the targeted buyers?

4) How are buyers informed about products?

5) What motivates the individuals to buy?

6) What should be marketed—goods, services, or both?

7) Should emphasis be placed on:

   a. the producer/marketer him/herself?

   b. the quality of the products?

   c. the selection of offerings for sale?

   d. specialized services provided?

   e. or merely the existence of the business?

8) When, if ever, should a product be offered at a below market price?

9) What disadvantages and advantages exist when competing with existing suppliers?

The responsibility for determining if a market exists for a particular product is up to the individual producer. The producer is also responsible for developing markets in the initial phases of diversifying a farming operation. Alternatives for marketing exist for almost every item produced. Some producers may be able to exploit all such options. Along with looking at these options, a producer must look at the long-term effects of choosing one option over another. Excess production should never be dumped in the market at a lower price. This is especially true if it competes with an outlet that is currently being serviced.

Establishing The Sale

Selling is the process of assisting and/or persuading a perspective customer into buying a commodity or a service.

When looking at any alternative agricultural enterprise, it is not enough to know what to produce and what are the market conditions. A producer will also need to know how to market a product and establish a sale. There are two basic areas which will assist in establishing sales:

1) The development of one's own personal sales strategies.

2) Understanding the alternatives available for facilitating a sale.

PERSONAL SALES STRATEGIES

The producer must determine who will act as a salesperson and at what level of expertise. The ability to handle sales will determine the success of moving the product into the marketplace.

Many large companies have a battery of tests that are used to screen sales applicants. If the applicant does not score a certain way, because of traits that are not deemed appropriate for a successful salesperson, the company does not usually waste its time training the person. Since most producers will not have such tests to determine their sales capabilities, each must rely on their instinct.

Whether the producer or another member of the farming operation will undertake the marketing function, the manner in which the individual presents the product and him/herself will be directly related to the success of the sales effort. The following are some basic principles which may assist individuals in developing good personal sales strategies.

1) Know Product. It is important to relay to the buyer all information which makes it worthwhile for them to purchase the product. If the salesperson knows the product from A to Z then the value of the product can be highlighted. A picture will be painted on the customer's mind. Always exhibit confidence in the product. Point out it's advantages, not its problems.

2) Sell Benefits. If any special services or product guarantees are offered they should be emphasized. If any other advantages exist over dealing with the competition, they should also be stressed to the buyer.

3) Empathize. Everyone has good and bad points. Always look for the good traits in customers and act pleasant to everyone. Such an attitude can be rewarded with a sale. In addition, if the motives of the buyer are understood, then this task will be even easier.

4) Plan Presentations. Salespeople must present what is being sold in a business like manner. They must also have planned statements as to why the purchaser should buy the product. Quality, quantity, benefits, services, and product selection should be presented by the salesperson.

5) Always Look Good. A livestock judge once said, "If two animals are equal in all points, then I look at the handler and break the tie

according to who's appearance is most appropriate." When selling any product, the salesperson's appearance and actions are very important.

6) Follow Through. After each sales effort, whether successful or not, the prospective buyer should be left with the idea that there will be a return sales contact. If a customer believes that the individual cares enough to return, then some degree of respect will have been established. If the return visit will not be made for a long time, a note should be written or a call given to remind the buyer that interest still exists in doing business.

7) Value the Product. Never ask a potential buyer what is the best price that can be received for the product. If this occurs two thoughts cross the purchaser's mind: either the buyer will feel that the salesperson does not have much respect for the product; or the buyer will know that s/he has the upper hand in negotiations. Therefore, know the market value of the product prior to making the sales contact.

8) Quick Response to Complaints. Always listen to the person who complains and let them do most of the talking. With a few pertinent words the complaining customer can be guided toward knowing s/he has not received as bad of or intentional treatment as initially perceived. When a customer complains, it usually means that the person wants to continue business relations. If the customer did not complain, the relationship would probably just be severed without any explanation. If actions must be taken to rectify a complaint, response should be immediate thereby signaling that the customer's business is valued.

In addition, the salesperson will also need to know how to build clientele. There are three basic ways to establish business or to increase the number of customers.

1) Cold Canvass. The cold canvass method deals with taking the product and making calls on perspective buyers. This method takes a lot of ambition, initiative, time, and sales skills. Customers can be found using this method, but many doors may have to be knocked on. If a product is being offered by an individual who is not known by the perspective buyer, then cold canvass offers the opportunity to establish a business relationship. It may also be used to introduce the product, business, and salesperson to the perspective buyer.

2) Goodwill. Goodwill is the advantage in trade that a business has gained beyond the value of what is offered for sale. If goodwill exists it may not be necessary to have a product superior to that offered by the competition. Goodwill can make up the difference. In a competitive marketplace, maintaining repeat customers is very important. If goodwill is established, then maintaining the repeat customer is much easier.

3) Referrals. The most important source of new business, one which is often ignored, is established from referrals. Customers who know the product often suggest to friends and acquaintances that they purchase the product. Existing buyers can also provide:

A) A list of other potential buyers.

B) Written testimonials on the product/services.

C) Ideas, which can be incorporated into future sales strategies, on why they needed the product and how the product satisfied them.

The producer's ability to convince the buyer that the product being sold is competitive to other suppliers is often essential. However, when selling directly to consumers, a different strategy my be employed. There are many courses available which can assist individuals in refining their sales techniques. These should be considered by every producer who will be taking on the marketing function for an alternative enterprise.

FACILITATING A SALE

Various agreements and contracts can be utilized by agricultural producers for the sale of their products. These are predominately utilized when:

1) Brokers are included in the transaction of a sale.

2) If membership is obtained in a cooperative.

3) For noting the conditions of a sale.

BROKERS. A broker is a person or firm that negotiates the sale or purchase of products for or on behalf of either a producer or buyer. The broker acts on the instructions and authorizations outlined in his/her contract with the client. The broker never acts as an agent of both parties. A broker many times negotiates the sale without ever seeing the product. In other instances the broker may facilitate that sale after formulating an appraisal of the product's quality. Generally, a purchase is made in the buyer's name and the seller directly invoices the buyer. However, the broker may be authorized by the contract to negotiate purchases in his/her name, pay the seller for the product, plus make arrangements for its loading and shipping. Their broker then invoices the buyer directly for the cost price plus the brokerage fee and the cost of any agreed upon accessorial service charges. Such charges may include packaging and loading. In all cases a broker is not paid a commission until the sale is finalized.

Brokers are usually utilized by producers when interest does not exist in the direct function of marketing. Brokers are also used when a producer feels ill-equipped to function as a marketer. In addition, the use of brokers may be beneficial if there is not time available to carry out the marketing functions. These functions may be necessary to move a product into the marketplace. In determining whether to utilize a broker, a producer must analyze where existing expertise lies. The producer must also calculate the amount of time available for the marketing function. For example, if a producer plans on committing 90% of the available time on production, it is not likely any indepth marketing can occur.

COOPERATIVE. A cooperative is an operation owned by a group of producers. Its primary function is to receive, grade, store and sell product for the total group of producers. The basic principles of a cooperative are:

1) Democratic control where the producer members, regardless of investment, are allowed only one vote.

2) Patronage dividends are net savings distributed to the members on the basis of how each uses its goods and services.

3) Open membership which is voluntary for anyone who meets the membership qualifications.

4) Predetermined and limited return on investment.

5) Provide educational programming to improve the success of the cooperative through expanding the skills and knowledge of its membership. In addition, a cooperative may establish rules on what will be sold and/or what quality standards will govern the product(s)) marketed.

A marketing agreement between the cooperative and the producer may be included. This agreement may require the producer to sell product to the cooperative. Such agreements are used to insure that there is enough volume to maintain the operation and to provide sufficient volume for sales. Cooperatives are voluntary and only obligates the producer to the extent s/he permits. In many cases, producers pledge only a part of their product to the cooperative, while the remainder is marketed elsewhere.

The producer may join a cooperative where the product is either bought at a wholesale price by the cooperative or placed on consignment with the cooperative. In the first instance, the producer receives a wholesale price for the product and may receive dividends from the cooperative. In the second instance, the producer receives payment for the amount of product sold through the cooperative.

CONTRACTS AND AGREEMENTS. A contract is an agreement that is enforceable by law. However, an agreement is not necessarily a contract. Each party to an agreement obtains certain rights and assumes certain duties and obligations. When such an agreement meets all the legal requirements of a contract, the law recognizes it as binding upon all parties. If one of the parties to the contract breaks the contract, the law allows the other party an appropriate action for obtaining damages or enforcing performance by the party breaking the contract.

Too many times new producers consider tentative agreements to be oral contracts in which the buyer promises to take product when the producer delivers the stated product. These agreements generally contain statements such as:

> "We agree that if you can provide the quality and quantity when we require it, at a competitive price, we would use you as a secondary supplier."

These types of agreements are very tenuous and can be interpreted to mean that product might be purchased if it is economically advantageous to the buyer. When the delivery date comes the buyer often announces that the product is no longer needed. This may be due to the product arriving when there is an excess supply in the marketplace. It may also be that the price required by the producer is not as competitive as the buyer deems necessary for dealing with a new supplier.

A grower should not produce on the basis of a tentative agreement. It is relationship initially, but it is imperative to keep close contact with the buyer to reinforce a sale.

VALID CONTRACTS. A valid contract is one that will be enforced by the courts. If a contract does not fulfill the following requirements, it may be considered invalid. The contract:

1) Must be based upon a mutual agreement by the parties to do or not do a specific thing;

2) Must be made by parties who are competent to enter into a contract that will be enforceable against both parties;

3) Promise or obligation of each party must be supported by consideration (i.e., money, or the delivery of goods) given by each party to the contract.

4) Must be for a lawful purpose.

5) Will in some cases have to meet certain formal requirements (i.e., when the sales price exceeds $500, the Statute of Frauds requires all contracts to sell or contracts of sale be evidenced in writing in order to be enforceable).

One of the parties to a contract of sale may indicate that the price will be fixed by them or by a third person at a later date. If this is the case, a binding contract does not exist as the price is not fixed. However, a contract would be valid, even though it did not state a definite price, if reference was made to the fact that the market price that prevails at the time of delivery will be given. This will hold only when there is an established market on which to base the price.

WRITTEN AND ORAL CONTRACTS. A written contract is one in which the terms are set forth in writing rather than expressed orally. A written contract provides two major advantages over an oral contract. These include:

1) Existence of a contract cannot be denied if it is in writing. If there were no witnesses when an oral contract was formed, one of the parties might successfully deny that any contract was formed.

2) If the wording is clear, explicit, and complete, disputes between parties as to the terms of the agreement are minimized with a written contract, as opposed to an oral contract where the parties frequently differ as to the terms of the contract.

The most commonly used written contracts of sale by producers are with manufacturers/processors. These contracts generally list:

1) A product's condition at time of delivery statement.

2) A date of delivery.

3) Minimum and maximum amount of product which will be accepted. The price to be paid.

Inclusion of a defined maximum amount of product is for the buyer's benefit. This is to avoid the influx of large volumes during better-than-average production years. Such an influx may place a burden on the processing capabilities of the plant. They may also create a hardship on producers who are to bring in product at a later date. In addition, some manufacturers/processors may outline specific requirements of production in the contract. A rule of thumb: The more the production is managed by the manufacturer's contract, the more likely the product is to receive full acceptance and full price. This will only hold true if the producer complies with the contract terms.

Contracts, either oral or written, may call for products to be sold f.o.b., free on board, at a designated point. If this is the case the seller bears the risk and expenses until the product is delivered to the f.o.b. designation. After that, any damage or destruction of goods does not affect the buyer's duty to pay for the goods. Damage or destruction of a product may occurs prior to arriving at the f.o.b. point. If this happens, the buyer can either consent that the contract is void or accept the product subject to a reduction in price. Furthermore, the buyer cannot assert any claim against the seller for breaking the contract.

Summary

Marketing is the revenue generating function of the production system. It is paramount to the success of any farm enterprise. In order for successful marketing to occur, the producer will need to:

1) Constantly follow through with the marketing function.

2) Make the required investment in both time and money for accomplishing sales.

3) Develop secondary or alternative marketing options as insurance against failure of required sales to targeted outlets.

4) Continually monitor market conditions and realign when necessary based on predetermined approaches.

Notes:

Visual Masters
and
Activity Sheets

SALES TO A MANUFACTURER

A MANUFACTURER IS A COMPANY WHO ACCEPTS RAW AND SEMI-PROCESSED GOODS, REFINES THE PRODUCT, AND DISTRIBUTES TO OTHER MARKETING OUTLETS.

CHARACTERISTICS:

1. CONSISTENT NEED FOR LARGE VOLUMES OF PRODUCT.
2. SMALL NUMBER OF MANUFACTURERS AVAILABLE WHO DEMAND RAW PRODUCTS.
3. GENERALLY LOCATED:
    - A. CLOSE TO NEEDED PRODUCT SUPPLIES.
    - B. WHERE LABOR IS LEAST EXPENSIVE.
    - B. NEAR THEIR MARKETS.

ADVANTAGES OF SELLING TO A MANUFACTURER:

1. MINIMAL MARKETING EXPERTISE NEEDED.
2. CONTRACTS OF SALE ARE ESTABLISHED PRIOR TO PRODUCTION.

DISADVANTAGES OF SELLING TO A MANUFACTURER:

1. CONTRACTS ARE NEGOTIATED ONLY DURING A SPECIFIC TIME PERIOD.
2. LOW PER UNIT PRICE.
3. RIGID PRODUCT SPECIFICATIONS.

SALES TO WHOLESALERS

WHOLESALERS RECEIVE LARGE VOLUMES OF PRODUCT BY THE PALLET IN BULK BINS, AND BY THE SEMI-TRUCK LOAD; BREAKS IT DOWN TO SMALLER AMOUNTS; AND DISTRIBUTES TO RETAILERS, AND FOOD ESTABLISHMENTS.

CHARACTERISTICS:

1. A TIGHT NETWORK OF SUPPLIERS AND BUYERS.
2. SERVES A REGIONAL OR LOCAL AREA.

ADVANTAGES OF SELLING TO A WHOLESALER:

1. PURCHASER OF LARGE VOLUMES OF PRODUCTS.
2. NEEDS CONSISTENT SUPPLIES.
3. LIMITED MARKETING TIME REQUIRED.

DISADVANTAGES OF SELLING TO A WHOLESALER:

1. A LIMITED NUMBER OF WHOLESALERS TO SUPPLY.
2. NO WRITTEN SALES CONTRACTS AVAILABLE.
3. NOT REQUIRED TO ACCEPT PRODUCT WITHOUT FEDERAL INSPECTION.

SALES TO RETAILERS

RETAILERS RECEIVE MEDIUM SIZED VOLUMES OF PRODUCT BY THE CARTON/ CRATE AND IN BULK BINS; OFFERS PRODUCT IN CONSUMER-SIZED PACKAGES; AND SELLS DIRECTLY TO THE ULTIMATE CONSUMERS.

CHARACTERISTICS:

1. OFTEN REQUIRES SPECIALIZED PACKAGING.
2. LOCATED CLOSE TO CONSUMER TRAFFIC.

ADVANTAGES OF SELLING TO A RETAILER:

1. CAPTURE A HIGHER PERCENTAGE OF PRICE PAID BY THE CONSUMER.
2. ACCEPTS LIMITED SUPPLIES.

DISADVANTAGES OF SELLING TO A RETAILER:

1. MUST RELY ON THE RETAILER'S ABILITY TO SELL THE PRODUCT OFFERED:
    A. HOW MUCH WILL THE RETAILER PROMOTE THE PRODUCT?
    B. HOW AND WHERE WILL THE RETAILER DISPLAY THE PRODUCT?
2. REQUIRES HIGHER MARKETING COSTS THAN SELLING TO WHOLESALERS...REQUIRES SERVICING A GREATER NUMBER OF OUTLETS TO SELL AN EQUAL VOLUME OF PRODUCT.

DIRECT TO CONSUMER SALES

WHEN THE PRODUCER ACTS AS A RETAILER.

CHARACTERISTICS:

1. ANY PROFIT REALIZED FROM SALE IS RETAINED BY THE PRODUCER.
2. PRODUCER MUST ACT AS TRANSPORTER, ADVERTIZER, SALESPERSON, AND PACKAGER.

ADVANTAGES OF SELLING DIRECT TO CONSUMERS:

1. ANY PROFITS REALIZED ARE CAPTURED BY THE PRODUCER.
2. SMALLER VOLUMES CAN BE SOLD WITH HIGHER NET RETURN.
3. PROVIDES THE PRODUCER THE GREATEST CONTROL OVER MARKETING.

DISADVANTAGES OF SELLING DIRECTLY TO CONSUMERS:

1. HIGH LEVEL OF EXPERTISE IN MANY DIFFERENT AREAS NECESSARY TO MAKE A SALE.
2. MUST CARRY ON ALL FUNCTIONS NECESSARY TO GET THE PRODUCT TO THE CONSUMER.
3. REQUIRES MORE MANAGEMENT TIME THAN OTHER MARKET CHANNELS.

FOUR MAJOR CONSIDERATIONS IN THE DEVELOPMENT OF A MARKETING STRATEGY

1) **TIME...**

   HOW MUCH TIME IS AVAILABLE FOR MARKETING?

2) **SERVICE AREA...**

   WHAT DISTANCE CAN THE PRODUCT BE TRANSPORTED AND STILL BE PROFITABLE?

3) **COMPETITION...**

   HOW WILL THE COMPETITION REACT TO NEW SUPPLIERS?

4) **SPECIFICATIONS...**

   WILL THE PRODUCT MEET OR EXCEED INDUSTRY STANDARDS?

PRINCIPLES OF A GOOD PERSONAL SALES STRATEGY

1. KNOW YOUR PRODUCT
2. SELL BENEFITS
3. EMPATHIZE
4. PLAN PRESENTATIONS
5. ALWAYS LOOK GOOD
6. FOLLOW THROUGH
7. VALUE THE PRODUCT
8. COURTESY AND QUICK RESPONSE

CONTRACTS

FIVE REQUIREMENTS MUST BE FULFILLED IF A CONTRACT IS TO BE UPHELD IN A COURT OF LAW.

1. BASED ON A MUTUAL AGREEMENT.
2. THE PARTIES ARE COMPETENT WHEN THE CONTRACT IS ENTERED INTO.
3. BOTH PARTIES RECEIVE A BENEFIT (PRODUCT OR MONEY).
4. THE TRANSACTION IS LAWFUL.
5. MEETS ANY FORMAL REQUIREMENT SET FORTH UNDER STATE OR FEDERAL LAW.

ORAL CONTRACTS VS. WRITTEN CONTRACTS

A PERSON COULD GET OUT OF AN AGREEMENT IF THERE ARE NO WITNESSES TO AN ORAL CONTRACT....THE EXISTENCE OF A WRITTEN CONTRACT CANNOT BE DENIED.

DISPUTES CAN BE SETTLED IF THE TERMS OF THE CONTRACT ARE CLEARLY WRITTEN....PARTIES FREQUENTLY DIFFER ON THE TERMS OF AN ORAL CONTRACT.

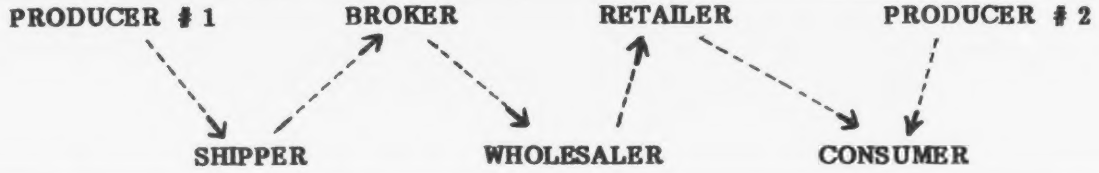
BASIC WAYS TO INCREASE CUSTOMERS

COLD CANVASS

GOODWILL

REFERRALS

DIAGRAM FOR STUDENT PLACEMENT


PRODUCER # 1
BROKER
RETAILER
PRODUCER # 2
SHIPPER
WHOLESALER
CONSUMER

NAME TAGS
CUT OUT ALONG DASHED LINES

	WHOLESALER
PRODUCER # 1	RETAILER
SHIPPER	CONSUMER
BROKER	PRODUCER # 2

CUT ALONG DASHED LINES AND PLACE ALL OF THE **(A)** VARIABLES IN CONTAINER #1, **(B)** VARIABLES IN CONTAINER #2, **(C)** VARIABLES IN CONTAINER #3, AND **(D)** VARIABLES IN CONTAINER #4.

(A)

MARKET SERVICE AREA:
5 MILES

(A)

MARKET SERVICE AREA:
50 MILES

(A)

MARKET SERVICE AREA:
100 MILES

(A)

MARKET SERVICE AREA:
500 MILES

(A)

MARKET SERVICE AREA:
1000 MILES

(B)

10% OF TIME AVAILABLE
FOR MARKETING

(B)

30% OF TIME AVAILABLE
FOR MARKETING

(B)

50% OF TIME AVAILABLE
FOR MARKETING

(B)

70% OF TIME AVAILABLE
FOR MARKETING

(B)

100% OF TIME AVAILABLE
FOR MARKETING

(C)

NO MARKETING
EXPERTISE

(C)

PERSONAL TRAITS BUT
NO FORMAL TRAINING
OR SALES EXPERIENCE

(C)

SOME FORMAL TRAINING
OR SALES EXPERIENCE

(C)

MARKETING EXPERT
BUT NOT FAMILIAR
WITH PRODUCT

(C)

MARKETING EXPERT
AND FAMILIAR
WITH PRODUCT

(D)

% OF OVERALL CONSUMER
DOLLAR DESIRED:
NOT A CONCERN

(D)

% OF OVERALL CONSUMER
DOLLAR DESIRED:
JUST TO COVER COSTS

(D)

% OF OVERALL CONSUMER
DOLLAR DESIRED:
ANY PORTION OF PROFIT

(D)

% OF OVERALL CONSUMER
DOLLAR DESIRED:
ANY PORTION OF PROFITS

(D)

% OF OVERALL CONSUMER
DOLLAR DESIRED:
CAPTURE ALL PROFITS

THE INTERVIEW

OFTEN BUYERS OF PRODUCTS CAN BE THE BEST SOURCE OF INFORMATION. WHEN LOOKING FOR SALES INFORMATION OR MARKET KNOWLEDGE ON A POTENTIAL PRODUCT, A SIMPLE QUESTIONAIRE CAN BE BENEFICIAL.

1. WHERE DO EXISTING SUPPLIES OF ______________________ COME FROM?

   A. ______________________________

   B. ______________________________

   C. ______________________________

2. WHAT PROBLEMS DO YOU HAVE WITH CURRENT SUPPLIES/ OR SUPPLIERS?

   A. ______________________________

   B. ______________________________

   C. ______________________________

3. WHAT IS THE EXISTING METHOD FOR PACKAGING THE PRODUCT?

   A. ______________________________

   B. ______________________________

   C. ______________________________

4. WHAT IS THE CURRENT VOLUME YOU ARE CURRENTLY RECEIVING?

   __________ per day __________ per week __________ per month

5. IF THE PRODUCT WAS AVAILABLE LOCALLY, WHAT IS THE MINIMUM ACCEPTABLE QUANTITY?

   ____

6. HOW OFTEN DO YOU RECEIVE ______________________________?

THE INTERVIEW
(Page 2)

7. WHAT ARE YOUR QUALITY STANDARDS FOR ______________________________?

A. ____

B. ____

C. ____

D. ____

8. ARE THERE ANY SPECIAL SERVICES NOW BEING OFFERED BY THE PRODUCT'S EXISTING SUPPLIERS?

A. ____

B. ____

C. ____

9. WHAT KINDS OF SERVICE WOULD YOU LIKE TO SEE OFFERED?

A. ____

B. ____

C. ____

10. WHAT WOULD IT TAKE TO BECOME ONE OF YOUR SUPPLIERS?

A. ____

B. ____

C. ____

THE K.Y.P.'S

(KNOWING YOUR PRODUCT)

LIST ALL OF THE ATTRIBUTES OF YOUR SELECTED PRODUCT AND REASONS WHY A CUSTOMER SHOULD PURCHASE YOUR PRODUCT.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

WORD SCRAMBLE

List the 4 basic channels for marketing products:

1. TUMUFERSNAACR _ _ _ _ _ _ _ _ _ _ _ _ _
2. OWLSAHELERS _ _ _ _ _ _ _ _ _ _ _
3. LARSEERTI _ _ _ _ _ _ _ _ _
4. NEORSMUCS _ _ _ _ _ _ _ _ _

When developing a marketing strategy, what are the 4 main considerations?

1. POCSE FO CIRSEVE RAAE

   _ _ _ _ _   _ _   _ _ _ _ _ _ _   _ _ _ _

2. MITE _ _ _ _
3. TEPTIMICOON _ _ _ _ _ _ _ _ _ _ _
4. CITIESPINCOAFS DAN TIRERENSQUME

   _ _ _ _ _ _ _ _ _ _ _ _ _ _

   _ _ _   _ _ _ _ _ _ _ _ _ _ _ _

List the 3 basic ways to increase customers:

1. LOCD NASCAVS _ _ _ _   _ _ _ _ _ _ _
2. DILGOLWO _ _ _ _ _ _ _ _
3. RAFLEERSR _ _ _ _ _ _ _ _ _

WORD SCRAMBLE

List the 4 basic channels for marketing products:

1. TUMUFERSNAACR MANUFACTURERS
2. OWLSAHELERS WHOLESALERS
3. LARSEERTI RETAILERS
4. NEORSMUCS CONSUMERS

When developing a marketing strategy, what are the 4 main considerations?

1. POCSE FO CIRSEVE RAAE
SCOPE OF SERVICE AREA
2. MITE TIME
3. TEPTIMICOON COMPETITION
4. CITIESPINCOAFS DAN TIRERENSQUME
SPECIFICATIONS
AND REQUIREMENTS

List the 3 basic ways to increase customers:

1. LOCD NASCAVS COLD CANVASS
2. DILGOLWO GOODWILL
3. RAFLEERSR REFERRALS

Crop-Specific Market Conditions

Objectives

After the completion of this unit the student will be able to:

1. Identify and describe the major post-harvest precooling methods.

2. Describe the reasons behind proper post-harvest handling and pre-cooling.

3. List containers for shipping fresh produce, siting examples of product that is packaged in each type of container.

4. Describe basic handling and storage requirements for each of the crops addressed within this unit.

Materials Needed

One 'mature-green' tomato
One 'pink' tomato
One 'red-ripe' tomato
One waxed flat-topped fiberboard box
One full-telescoped fiberboard box
Two fiberboard crates with wire handles
One bunch broccoli
Three strawberries
One 'pink' tomato
Large quantity of potatoes

Visual Masters

VM-CS-1	Containers
VM-CS-2	Precooling Methods
VM-CS-3	Suitability of Cooling
VM-CS-4	Broccoli Requirements
VM-CS-5	Brussels Sprouts Requirements
VM-CS-6	Cabbage Requirements
VM-CS-7	Cantaloupe Requirements
VM-CS-8	Cauliflower Requirements
VM-CS-9	Kohlrabi Requirements
VM-CS-10	Potato Requiremenmts
VM-CS-11	Pumpkin Requirements
VM-CS-12	Raspberry Requirements
VM-CS-13	Strawberry Requirements
VM-CS-14	Summer Squash Requirements
VM-CS-15	Sweet Corn Requirements
VM-CS-16	Tomato Requirements
VM-CS-17	Watermelon Requirements
VM-CS-18	Winter Squash Requirements
VM-CS-19	Potato USDA Grade Standards

Activities

ACT-CS-1	Cool It Down
ACT-CS-2	Putting It Together

Interest Approach

1. Recruit six students to be volunteers and place them in three teams.

2. Position team members face-to-face with an eighteen foot distance between them.

3. Explain to the class that you have three tomatoes picked at different stages of maturity; a 'mature-green,' a 'pink' and a 'red-ripe.'

4. Give each team a tomato.

5. Instruct each team to being tossing the tomato back and forth between them.

6. Allow the toss to continue for 2 minutes, recording the length of

time tossed for any tomato that can no longer be used.

7. Place the tomatoes where they can be observed by the class and have the students make comments on the condition of each tomato.

8. Begin a discussion on why post-harvest handling is important for maintaining the quality of fresh produce.

Teaching Procedures

1. Place a waxed flat-topped fiberboard box, a full-telescoped fiberboard box, and a two fiberboard crates with wire handles in three different locations around the class room. Instruct the students to write down their observations of how each container relates to the shipping and handling of fresh produce. Allow several students to present their findings. Use VM-CS-1 to discuss the importance of proper packaging for marketing fresh produce. Hand out ACT-CS-1 "Cool It Down" and have students complete.

2. Place some broccoli, a 'pink' tomato, and a strawberry on plates in the window. Make observations on a daily basis regarding the condition of the produce. After a week compare the rates of deterioration. Use VM-CS-2 to discuss the importance of proper storage requirements.

3. Use VM-CS-3 to describe the various pre-cooling methods and discuss the suitability of each method to different types of crops. Distribute ACT-CS-2 "Putting It Together" for student completion.

4. Use VM-CS-4 through VM-CS-18 to identify the marketing standards, packaging units and storage requirements for each crop.

5. Describe the compatibility considerations of different products stored in the same vicinity, with regard to temperature ranges humidity levels, and gas concentrations.

Extra Suggested Activities

1. Take a field trip to a processing plant and observe how product is received, find out how long it is held, observe the handling procedures, and find out why each particular crop's characteristics are important to the final product.

2. Invite a produce buyer to the class to present the requirements which must be met in quality of packaging, pack and product.

3. Take a field trip to visit an Iowa producer who utilizes a post-harvest handling, grading and packaging system.

4. Divide the class into two groups and have them research and provide a panel discussion on the importance of maintaining quality from field to consumer.

5. Instruct each student to list six vegetable and/or fruit crops. After selection, determine what type of pre-cooling methods could be utilized for all crops selected.

6. Obtain a large quantity of potatoes (insure that it is not all of like quality) and have the students size and Use VM-CS-19 to grade the product according to USDA grade standards.

7. Instruct the students to design a model for produce handling at a farmers market or roadside stand, which insures quality retention of product.

8. Direct the students to develop a display by contacting packaging companies for samples and brochures of various types of produce containers marketed by the company.

9. Direct the students to contact pre-cooling manufacturers or suppliers for cost estimates and volume requirements on the average system sold.

10. Instruct each student to select a crop and discribe how it would be handled through various marketing channels. (i.e., farmers market, grocery stores, wholesale, processors)

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Technical Information

Introduction

Marketing of produce is essential to the success of fruit and vegetable production. Growers must produce quality products in order to compete in the commercial market. Quality is the measurement of the appearance and worth of a product, including its size, color, shape, texture, cleanliness and freedom from defects and damage. Well managed harvesting, packing, cooling and delivery procedures are important to ensure high quality.

Postharvest Handling Procedures

Produce continues most of its life processes after harvest, including respiration and transpiration. Through respiration plants take up oxygen, release carbon dioxide and generate heat as they convert their food reserves into energy. As the life processes continue, harvested fruits and vegetables continue to mature and begin to deteriorate. Softening begins as changes occur in the cell wall composition and structure, color changes may take place and body weight of the fruit and vegetable may decrease from moisture loss due to transpiration.

Temperature will directly affect the life processes, including the rate of respiration and transpiration. Higher temperatures will cause faster ripening and deterioration, while lower temperatures will retard the processes.

Quickly cooling fresh produce will help to slow down the normal ripening and deterioration of produce. Supplying humidity is necessary to prevent the shriveling of fruits and vegetables from excessive weight loss, and adequate ventilation is needed to remove the heat energy released from the produce during respiration and allow for the adequate exchange of gases.

As fruits and vegetables continue the respiration process they require oxygen which is usually available in sufficient quantities in the air, as only small amounts are required. Without adequate oxygen, fermentation will take place. Carbon dioxide is released through the respiration process and high levels will damage some produce. It is important that produce is packaged in properly ventilated containers to allow an adequate exchange of gases.

Fruits and vegetables vary in their rate of respiration, but for most products proper cooling, appropriate humidity levels and adequate ventilation are necessary in maintaining quality products for the commercial market.

Good handling procedures begin at harvest. Any physical injury will increase the rate of deterioration. Careful handling will help avoid damage and bruising of products.

Most crops sold in the fresh market are currently hand harvested. Many of the leafy vegetable crops such as broccoli, cauliflower cabbage, brussels sprouts, are hand harvested as multiple harvests are necessary to obtain maximum quality yields.

Bush snap beans and sweet corn are two fresh market products that are mechanically harvested. Produce grown specifically for the processing market, such as potatoes, tomatoes, sweet corn, cucumbers, snap peas and green peas are mainly picked by mechanical harvesters.

Harvesting during the cool part of the day and keeping loads of produce shaded from direct sunlight will help prevent excessive heat build up.

Once harvested, fruits and vegetables are cleaned, sorted, sized and usually packaged before being sold on the fresh produce market. Specific commodities may require other special preparation, such as waxing or drying. Produce can be cleaned for market by spraying and washing or dry brushing, depending on the specific crop. Some crops may need to be dried after washing to prevent the growth of decay organisms.

Root and tuber crops are often stored unwashed and then cleaned as they are removed from storage and prepared for market.

After cleaning, fruits and vegetables are hand sorted to remove produce that is unsuitable for market, such as damaged, diseased or mishapen produce. Produce is then sized manually or by machine, and graded. If selling fruit and vegetables in any volume, they should be sized on the basis of grade and size. Buyers desire specific and uniform sizes within each container. Preferences in size vary with the potential market use.

Precooling Methods

One of the most important steps in preparing commodities for market is precooling. Precooling is the rapid removal of field heat from fresh fruit and vegetables during or after their preparation for market. Precooling products is extremely important as it retards the ripening, the deterioration processes and lengthens the products shelf life.

There are several precooling methods used to cool produce before storage or marketing. These include room cooling, forced-air cooling, hydrocooling, package-icing and vacuum cooling. The cooling method used depends on the perishability and refrigeration requirements of fruits and vegetables and their adaptability to the specific method. Most commodities respond best to one or two of the precooling procedures. This unit does not cover the economic issues of the various precoolinig methods which will be a major factor in the utilization of any precooling operation.

ROOM COOLING

In room cooling, boxed produce is placed into a refrigeration room. Produce containers should be stacked to ensure adequate air flow and to allow air contact on all container surfaces. Containers should have holes for better ventilation which will allow faster and more uniform cooling. Room cooling can be used on all commodities, although it is too slow of a process for many products. Cooling times vary greatly within loads, pallets and containers.

FORCED-AIR COOLING

Forced-air cooling or pressure cooling is a method that creates a pressure gradient to draw cold air through stacked produce. This method is used mainly on fruits, berries, fruit-type vegetables and tubers. Forced-air cooling is faster and more uniform than room cooling. Various designs of forced-air coolers are available, depending on the specific need. Stacking requirements and adequate ventilation are necessary for effective cooling.

HYDROCOOLING

Hydrocooling uses cold water to quickly and effectively cool produce by either emmersing or flooding the produce in bins of cold water or showering it with cold water. Produce can be cooled after being packaged for shipment or in single or multiple layers. Packaging containers used in hydrocooling must be water tolerant. The cooling rates of produce are affected by the temperature variance between the water and the product, the amount of water moving over the product and the length of time the product is exposed to the water. Chlorinated water is often used to prevent the spread of disease. Some products may need to be dried after being cooled. Produce that can be precooled with this method include leafy vegetables, stems, roots and some fruit and fruit-type vegetables.

PACKAGE-ICING

Several commodities are precooled by package-icing. Package-icing is a fast cooling method, but is limited to products that can tolerate water-ice contact.

These commodities include roots, stems, brussels sprouts, green onions and some flower-type vegetables. In this method produce is packed with crushed ice, flake-ice or liquid ice, which is a slurry mixture of ice and water. More expensive, water tolerant shipping containers are required.

VACUUM COOLING

Vacuum cooling is a quick efficient method for uniform cooling of produce which involves lowering the atmospheric pressure inside a large sealed chamber. Lowering the pressure reduces water vapor in the air causing water to evaporate from the product, which cools the produce. The rate of cooling is related to the ratio of the surface area of the commodity to its mass and the specific crops ability to give up moisture from its tissue. Vegetables and fruits suitable for this precooling method include some stem and flower-type vegetables and leafy vegetables. This process does create about 1% weight loss for each 6 degrees of product cooling.

Hydrovac cooling combines vacuum cooling with hydrocooling where a fine spray of water is showered over the produce to help reduce weight loss.

For any of these precooling methods to be effective, refrigerated rooms are needed to maintain lower temperatures after the precooling process. Proper cooling methods must also be utilized during transit to ensure product quality. Mechanical refrigeration is suitable for all commodities, although some fruits and vegetables require extra procedures such as top-icing and channel-icing where ice is applied over the load of produce. Windrowed top-icing is recommended as it provides air channels for adequate ventilation which allows for more effecient cooling.

Packaging

Containers for shipping are an important consideration. Shipping containers are any containers used to facilitate moving products from one place to another and provides some physical protection, although the degree of protection varies with the type of container. Containers must be strong enough to permit some stacking, provide some protection against moisture loss and allow adequate venting and air flow around produce for effective temperature control. Commonly used shipping containers include bags, fiberboard boxes, wooden crates and large bulk bins.

BAGS

Bags made of burlap, cotton or plastic mesh, and ventilated plastic film are suitable for shipping produce that requires mimimal protection from impact or bruising. Potatoes, onions and carrots are often shipped in ventilated or mesh bags. Vegetables that are top-iced for shipment are often packed in mesh bags, such as cabbage and sweet corn. Bags are also lightweight and allow for maximal visibility of the product.

FIBERBOARD BOXES

There are several types of fiberboard boxes: the full telescope (2-piece with top piece completely covering the bottom piece when closed),the partial telescope (top partially covers bottom piece) and the flat-top types (1-piece). There are also lock-lid fiberboard boxes, which have tabs to permit easy stacking.

Produce that has been precooled or that requires minimum refrigeration are frequently packaged in fiberboard boxes. Drawbacks to the fiberboard box are that it permits limited stacking and has a tendency to absorb moisture. Extra fiberboard liners and dividers help add strength. Boxes of full telescope construction are the most sturdy as it provides two outer walls.

Since fiberboard boxes cannot tolerate top-icing, produce must either be completely precooled before packaging/shipment, or the boxes must be treated with waxes or oils to help provide moisture resistance.

WIREBOUND BOXES
Wirebound boxes of wood veneer or combinations of veneer and fiberboard are used, along with sawn and nailed wooden boxes. These wooden boxes are very sturdy and have efficient strength for stacking. They are also water tolerant, permitting top-icing and package-icing of produce.

PLASTIC CONTAINERS
Low cost plastic containers are also being developed and used. These containers are molded sheets or foam plastic that provide the necessary strength for stacking, although they tend to be brittle and easily damaged with rough handling.

BULK BINS
Products are sometimes shipped in bulk bins that hold large amounts of produce. Large bulk containers can be loaded and unloaded mechanically with forklifts, allowing for easier and more economical handling. Bulk bins are used mainly for large produce items that are difficult to package in smaller containers, such as pumpkins, watermelons and winter squash.

LUGS
Lugs are sturdy containers, constructed of wood or corrugated cardboard for soft produce items. A Los Angeles or L.A. lug is a large wooden crate.

PALLETIZATION
The fresh market industry is moving toward palletization where fruits and vegetables will be handled and stored on standardized 100 x 120 centimeter (40 inch x 120 inch) pallets.

JUMBLE-PACK
Containers are filled by several methods. One of the easiest and most often used method is the jumble-pack. Produce is mechanically diverted from chutes into containers that are gently vibrated to help settle the product. Jumble-packs are filled by weight or count.

PLACE-PACKING
Place-packing is a method which involves the manual packing of sized fruit or vegetables into a container in a fixed pattern. Pre-formed trays are often used with place-packing as they reduce time and labor and the individual compartments protect the produce from damage.

FACE AND FILL PACKS
In face and fill packs, the top layer is separated by a tray or form, or the top layer can be placed on the bottom of the container, then righted when opened so the top layer is face up. Under the top layer, the remainder of the container is jumble-packed by count or weight.

MULTI-PACK
Smaller pint or quart baskets are sometimes used to pack fragil fruits, such as strawberries, raspberries and cherry tomatoes, within larger flats or crates.

When packaging produce it is important to use industry approved packaging and to have specified and uniform sizes within each container.

Storage, Transportation & Marketing Considerations

Product compatibility must be considered when storing and transporting commodities. Different produce requires different temperature and humidity levels to maintain freshness. Products sensitive to ethylene (a gas naturally produced by plants) should never be stored or transported with commodities that produce high amounts of ethylene, such as cantaloupe and apples. Certain commodities like broccoli and cabbage are very sensitive to ethylene as it hastens the ripening and deterioration process. Product odors from one commodity (i.e., onion) may also be absorbed by other fruits and vegetables, giving them a different aroma.

The care of harvested produce varies with the end use of each commodity. Products that are placed in storage for any length of time must be properly precooled. Commodities that will be transported long distances must also be precooled with adequate measures taken to maintain freshness and quality while in transit. The storage and shelf life of produce is important to wholesale and retail buyers. Efficient postharvest handling and proper packaging is essential to compete effectively in the retail/wholesale market.

Proper handling and precooling practices can not be over emphasized when maintaining quality produce for commercial markets. Well managed harvesting, packing, precooling and transportation methods are vital in assuring a high quality product.

Broccoli

Top quality broccoli should be firm with small compact flower bud clusters which are completely closed. The clusters should have a dark green or sage color, although a bluish or purplish cast is often characteristic of good broccoli. Individual heads should be bound together to form a unit or bunch, with each bunch neatly and evenly cut off at the base. Attached leaves and stems longer than the average length of the bunch should be trimmed. The desired diameter of each head is a measurement not less than 2-1/2 inches. The stem length should be between 6 inches and 8-1/2 inches. Heads should be free from decay or damage. Avoid overmature heads with the presence of open flower buds, or enlarged buds on the verge of opening. Yellowing or wilting is often indicative of poor handling practices.

Broccoli is generally hand-picked and field packed. Prime bud clusters are cut, trimmed, bound in bunches and placed in boxes. If bulk bins are used in the field, stems are trimmed, bunched and packed in cartons or wirebound crates at a central shed. Trimmed stems are tied into 1-1/4 to 1-1/2 pound bunches and placed in 1/2 cartons ranging from 20-23 pounds. Cartons contain 14-18 uniform bunches.

The respiration rate for broccoli is very high, causing it to deteriorate very rapidly after harvest. Postharvest cooling and handling methods must minimize water loss. Several postharvest cooling methods are effective. The use of liquid ice is highly recommended. A slurry mixture of water and ice is injected into special cartons that allow excess water to flow through. Hydrocooling is also well suited for broccoli, although a combination of hydrocooling and packed ice (or liquid) is preferred. Forced-air, portable vacuum cooling or hydrovac cooling (spraying with water and vacuum cooling) are also effective methods.

Broccoli should be top-iced for shipment, with box liners or perforated plasic bags (film wrap) used to decrease water loss. Prepackaging in ventilated film bags will help maintain a high relative humidity nd prevent wilting, while allowing for heat and gas exchange.

Adequate air circulation and spacing between containers in necessary during storage and shipment. Good fresh broccoli will hold for 10-14 days if stored at 32°F with a relative humidity of 90-95%. If broccoli is to be stored more than seven days, a controlled atmosphere of low oxygen or high carbon dioxide can double its storage life. Oxygen below 2% will help retard yellowing, and carbon dioxide levels at 10% will not only retard yellowing, but will also retard toughening and prevent mold growth. Broccoli should never be stored with ethylene producing products, as the ethylene accelerates yellowing of the florets.

Common shipping practices are to individually wrap the broccoli bunches and place them in waxed cartons not more than two deep. Containers often used for broccoli are the pony crate holding 40-42 pounds, and cartons or crates with 14 uniform bunches weighing 20-23 pounds.

Brussels Sprouts

Quality brussels sprouts are green, firm, solid and compact. A cross section of a high quality sprout will have light yellow inner leaves which are tightly arranged without large air pockets in between. The most desirable size for each sprout is one inch in diameter. Sprouts should never be larger than 2-2/3 inches or be withered or burst. Avoid brussels sprouts which are soft or puffy or with any sign of decay or yellowing, as yellowing is an indication of advanced aging.

Brussels sprouts are mainly hand harvested, as they require numerous pickings during the harvesting season. Mechanical harvesters are being developed and used which cut the stalk and remove the individual sprouts with a spring held rotating knife. Cut stalks are usually taken to a stationary stripping unit, as stalks must be hand-fed into the stripping unit.

Brussels sprouts should be refrigerated immediately after harvest to avoid yellowing, moisture loss or disease. Deterioration of the outermost leaves will occur even at temperatures of 50°F

Vacuum cooling is an effective method of postharvest cooling. Wet sprouts can be cooled from 50°F to 32°F in 13 minutes. Weight loss and wilting can be cut down by wetting the sprouts before vacuum cooling, and by top-icing soon after precooling. Brussels sprouts are well adapted to hydrocooling. Loose-pack cartons are usually top-iced.

Sprouts can keep up to one month if refrigerated at 32°F and a relative humidity of 90-95%. They will keep only half as long if held 41°F, and for 10 days if stored at 50°F. Controlled atmosphere storage has been used successfully in retarding yellowing of the leaves.

Packaging the sprouts in vented bags or overwrapped in waxed cups helps reduce wilting. Common shipping containers are loose pack cartons holding 25 pounds, and flats and cartons holding 12 10-ounce cups (7-1/2 to 8 pounds).

Cabbage

Cabbage heads should be solid, firm and heavy for their size. Leaves should be firmly attached to the stem with heads trimmed to four wrapper leaves, the leaves which tightly enfold about two thirds of the head. A bloom on the leaves is desirable and heads should squeak when rubbed against each other, indicating crispness. Internal leaves should be yellow to light green or dark purple (depending on the cultivar), and tightly packed. Heads which are puffy or burst or show signs of disease or damage should be avoided.

Size of cabbage heads is often categorized by weight into small, medium or large.

Pointed cabbage under 1-1/2 pounds is small, a 1-1/2 pound to 3 pound head is medium and any head over 3 pounds is considered large. Danish and Domestic cabbage under 2 pounds are small, heads from 2 to 5 pounds are medium sized and those over 5 pounds are large.

Cabbage for the fresh market is usually harvested by hand, while most cabbage grown for processing is mechanically harvested. Heads are inspected, sorted, graded and placed in pallet boxes or bags in the field.

Stems should not exceed more than one-half inch beyond the point of attachment of the outermost leaves.

Careful handling is necessary to avoid bruising and loosening of leaves. Loose leaves should be removed before storage to allow for better ventilation, with several tight wrapper leaves left on to protect the head. These leaves are usually removed when marketed. The tap root should be trimmed fairly close to the base of the head.

Cabbage can be effectively precooled by room cooling, hydrocooling and forced-air cooling. When rapid precooling is not necessary heads are loaded warm and immediately top-iced. If space is allowed to provide channels for the ice to go between rows, appropriate cooling will take place in several days.

Two crops of cabbage are usually grown each season. Early cabbage crops can be stored for 3-6 weeks, with late crops stored for 3-4 months, although storage life is dependent on the cultivar and the growing conditions. Cabbage with firm heads and high in soluble solids and cellulose store best. Storing cabbage at 32-38°F and a relative humidity of 90-95% will help to maintain fresh quality. Cabbage looses moisture easily and will wilt and become flabby at room temperature. Cabbage can be stored in pallet boxes or in shallow layers on slotted shelves.

Never store cabbage with products that emit high levels of ethylene, as it causes premature yellowing and abscission of leaves.

Cabbage heads can be marketed naked or overwrapped with various types of plastic covering. Red types of cabbage are usually wrapped to help maintain freshness, as their rate of turnover is slower. Cabbage is shipped in flat crates containing 53 to 60 pounds, in mesh sacks holding 50 pounds, or in cartons that hold 53 pounds. Packs should contain cabbage of similar varietal characteristics.

Cantaloupe

Top quality cantaloupe has a smoothly rounded depressed scar at the tip end. This scar is the indentation that remains after the mature fruit has been pulled from the stem at 'full slip' stage. A mature canteloupe is one which has reached the stage of maturity which will ensure the proper completion of the normal ripening process. Only part of the stem pulls off a 'half-slip' fruit, indicating an immature melon. It is preferable to harvest at the 'full slip' stage, as almost 1/2 the final concentration of sugars is accumulated during the last week of maturation. Cantaloupe does not increase in sugar content after picking, although it will soften and change in types of sugars.

A top quality marketing melon should be smoothly rounded and covered with a dense and prominent netting. This is the corky tissue that covers all or most of the surface. The ground spot, the area of fruit in contact with the soil, should also be covered with webbing, but it may not be as prominent. The color of the melon should be deep rather than pale, as pale coloring often indicates bland flavor. Avoid tan to brown melons as they tend to be soft and flat in flavor. Browning in the vein tracts, the longitudinal shallow indentations on the surface are also signs of aging.

The desired melon size is no less than 5 inches in diameter.

Melons with good internal quality should not have less than 9% soluble solids. It is recommended that the sample (plug) be taken from a longitudinal segement of the melon, using care to remove a uniform percentage of the flesh. Soluble solids are mostly sugars, so melons with a high concentration are likely to be sweet and flavorful.

Cantaloupe are harvested mainly by hand, picked into sacks, emptied into trucks and then hauled to the packinghouse for precooling. Cantaloupe are highly perishable so minimal time should be taken from harvest to market, with careful handling at all levels. To avoid bruising and scuffing, melons should never be dropped more than a few centimeters on any unpadded surface. Packaging in adequate size crates or in properly designed cartons which do not bulge also helps to reduce any physical damage to the melons. When hauling loads of melons to the warehouse or cooling facility, the cantaloupe should be kept shaded to prevent excessive heating or sunscald.

Precooling melons is essential to prevent self-heating during transit and marketing. Melons should be cooled to 40-50^{O}F. The precooling method used is often related to the packaging and loading methods used.

Hydrocooling is the most efficient method of rapid cooling. Melons that have been hydrocooled are often packed in fiberboard boxes which are tightly stacked for transit. This does not allow adequate ventilation so all field heat must be removed prior to packaging.

When melons can be stacked with adequate ventilation and when water resistant containers are used, melons can be partially precooled, top-iced and allowed to finish cooling while in transit.

Cantaloupe can withstand contact with ice for extended periods without chilling injury. Top-icing should be applied in windrows rather than in one uniform layer. Thick layers of ice will sometimes become solid and seal the surface melons, not allowing the air to circulate below. By applying the ice in windrows, channels form as the ice melts, permitting cold air to circulate around each melon.

Air cooling is often used to finish cooling melons after the field heat has been removed by hydrocooling. If cooling with forced air, the cold air must be forced around each melon to ensure adequate cooling and a high relative humidity should be provided to prevent the melons from drying out.

The storage life of cantaloupe is directly related to the degree of ripeness. Even under ideal conditions cantaloupe will deteriorate from field-fresh to fair in 12-16 days. Hydroheating can extend the storage life of a melon for 1 to 3 days. In this process melons are dipped or passed through 130^{O}F water for 30 seconds before being precooled. This treatment helps prevent common diseases such as alternaria rot and fusarium rot. If hydroheating is used, it should be followed by cold air cooling rather than hydrocooling.

Cantaloupe should be shipped in the firm mature state to avoid damage. Some are waxed before marketing to reduce moisture loss.

A variety of shipping containers are used for cantaloupe. There has been a trend toward the use of cartons instead of the wooden crate. One-half cartons weigh 38-41 pounds and pack 9, 12, 18 or 23 uniform sized melons. Two-third cartons and crates hold between 53-55 pounds of produce, jumbo crates hold 80-85 pounds, standard crates hold 70-80 pounds and the one half wirebound crates hold 45-50 pounds.

Packing with consistent sizes is preferred. The sizes of cantaloupe are often based on the number of fruits that can be packed into a standard wood crate. The larger the size, the smaller the number per crate. The most common shipping sizes are 45's, 36's, 27's, and some 23's.

Cauliflower

Quality cauliflower has snow white or creamy white, solid curds surrounded by turgid green leaves. It should be clean, firm, compact and free from any damage or decay. The desired marketing size of a head of cauliflower is no less than four inches in diamater. There is no quality variance between large and small heads of equal maturity. Heads should be closely trimmed with the butt being smoothly cut. There should be only enough jacket leaves to protect the head against bruising and they should not extend above the crown of the curd. Heads which are individually wrapped and cushioned when packed do not require jacket leaves. Curds with a yellowish color indicate incomplete shading of the head during maturation, which reduces eye-appeal. Dark cream to yellow curds also tend to be strongly flavored. Cauliflower with spreading or dark-specked curds or ricy curds are not desirable for marketing.

Cauliflower is usually hand harvested and placed into bulk trailers or bins and taken to a central shed for grading and packing. Heads are individually packed, often wrapped with a plastic film. Hydrocooling or vacuum cooling methods are both used with equal success. Prewetting the cauliflower heads before vacuum cooling will cut down the cooling time and reduce water and weight loss. Cauliflower is washed with chlorinated water prior to cooling, so it is usually wet and ready for vacuum cooling.

Most heads are individually wrapped in perforated film with four to six holes to provide adequate ventilation, as cauliflower is injured by excessive levels of carbon dioxide and low levels of oxygen. Levels of carbon dioxide between 5 and 10% will cause damage to cauliflower that becomes evident only after cooking. Curds become soft, turn yellowish-gray and emit a strong off-odor. Wrapping heads in nonperforated film wraps can cause carbon dioxide levels to raise over 10% withing 48 hours of marketing. Carbon dioxide injury can be counteracted by aeration for 6 hours or by cooking in acified water, although these methods are impractical in most cases. If held in low oxygen levels, cauliflower will also develop a strong off-odor when cooked. This problem will not be reverse by aeration.

Quality cauliflower will store and maintain good market quality for two to three weeks if held at 32°F with a relative humidity of 85-90%. Two weeks storage is the maximum storage length desired for good quality cauliflower with young heads storing better than more mature heads. Cauliflower is often stored with the head down to prevent moisture from accumulating on the curds.

The majority of cauliflower is film-wrapped and shipped in cartons with 12, 14 or 16 uniform heads weighing 21 to 25 pounds, or in wirebound crates weighing 45 to 50 pounds.

Kohlrabi

Quality kohlrabi should be clean and a good green or purple color (depending on the cultivar). Young small globes with fresh healthy leaves generally have the best flavor. Older globes tend to have tough and fibrous cells. The preferred marketing size is two to three inches in diameter.

Kohlrabi will readily wilt after harvesting and should be quickly handled to maintain freshness. Kohlrabi should be promptly cooled to below 41°F The relative humidity should be at least 95% to prevent excessive wilting and toughening . Packaging topped kohlrabi in perforated film will help to maintain moisture and freshness. Good quality kohlrabi can be stored up to one month at temperatures near 32°F and a relative humidity of 95%.

Kohlrabi is not currently sold in large quantities on the fresh produce market.

Potatoes

The potato industry has specific requirements for fresh potatoes, processing and chipping potatoes. Growers must grow, handle and store potatoes to meet these requirements. There are a number of potato cultivars grown, each with its own distinct use.

Top quality potatoes for the fresh market should be well shaped and free from damage or disease. The skins of the potatoes should be firmly set with a minimal number of potatoes having missing or feathered skin. The size of top quality potatoes is not less than 2-1/4 inches in diameter or 5 ounces in weight, and not varying more than 1-1/4 inch in diameter or more than 6 ounces in weight.

Potatoes for processing must be well shaped, free from damage and disease and not seriously shriveled or flabby. The preferred size is not less than 2 inches in diameter or 4 ounces in weight.

Quality chipping potatoes should be firm, clean, fairly well shaped and free from damage or disease. The desired size is not less than 1-7/8 inch in diameter.

The potato processing industry, chipping in particular, demand quality potatoes with high total solids, low reducing sugar, and specific textures and sizes. Buyers for chipping potatoes often buy on the basis on specific gravity which is the weight of the potato in air divided by its weight in water. This is a good measure of total solids and potato qualilty. Potatoes high in specific gravity are desired for baking, chipping and french fries.

Most potatoes are harvested with mechanical harvesters. Care should be taken during harvesting and handling to prevent excessive bruising, especially in cooler temperatures, as potatoes are more susceptible to bruising as the temperature lowers. Potatoes go through a curing period before going into storage or to market.

Curing is the natural ability of potatoes to heal skinned areas, shallow cuts and moderate bruises. Proper curing is necessary to ensure storage quality. Curing temperatures range from 45-65°F, depending upon the relative humidity, the variety and the eventual use of the potato. Potatoes processed into frozen french fries, dehydrated products or sold fresh are held at 50°F Chipping potatoes require higher curing and holding temperatures because a lower sugar content is desired and potatoes tend to accumulate sugar at lower temperatures. A high relative humidity of 90-95% should be used during the curing process to keep weight loss and shriveling to a minimum and to speed periderm growth.

The objective of the storage environment is to keep deterioration of the potato to a minimum. Temperature, humidity, air movement and darkness are important to the proper storage of potatoes. Even a small amount of light will cause greening as a result of chlorophyll production, which decreases grade and appearance. High relative humidity is necessary to avoid excessive weight loss.

As a general rule, potatoes will not sprout for two to three months, even if maintained at temperatures between 50-60°F. Early and summer harvested potatoes are usually not used for storage or are held only for a short time. A large percentage of the fall crop is stored for three to nine months before shipment to market.

The end use of the potatoes determine the proper storage environment. After curing, fresh market potatoes are quickly cooled to 38-40°F. Potatoes may adopt a sweet flavor if held in temperatures below 38°F. If stored at 32-34°F for 12 weeks or more, potatoes may develop mahogany browning or chill injury. Adequate air movement and a high relative humidity are important factors in preventing moisture loss. If the temperatures are kept at 38-40°F and the relative humidity is at 90%, potatoes can be kept for nine months to a year. If stored for periods longer than eight months, a sprout inhibitor should be used. Sprout inhibitors are often used when potatoes are stored at higher temperatures or for prolonged periods of time.

Potatoes for processing and chipping are stored at higher temperatures than fresh market potatoes to prevent the accumulation of sugars that take place at lower temperatures. Sugars cause the potatoes to fry dark, which is undesirable in the chip industry. Chippers are often stored at temperatures between 48-60°F while potatoes for french fries can be stored 45-50°F. Some potatoes for processing are kept at 40°F, but then require one to four weeks at 70°F to be reconditioned before being processed into chips. Potatoes for dehydrating can be stored at 40-50°F, but may need some reconditioning before processing. If stored for more than two months at moderate temperatures, a sprout inhibitor is necessary.

Potatoes that have been kept in storage at cool temperatures should be warmed to about 50°F before being marketed to reduce the possibility of bruising. When removed from storage, potatoes are washed, sorted, graded and sized and packed into shipping containers. Potatoes are shipped in a variety of containers, with a trend toward smaller containers which make handling and loading easier. Shipping containers including 100 pound sacks, 50 pound cartons and sacks, 20 pound film bags and 10 pound film bags. 50 pound bags and fiberboard boxes holding 50 pounds are popular for fancier packs of sized potatoes.

Pumpkin

Market quality pumpkins are well matured, clean and have a rich orange color. Pumpkins should be heavy for their size. Avoid pumpkins with excessive scarring, or with rinds that are broken or cracked. Due to the various sizes of pumpkins, no specific size requirements have been established.

Pumpkins are mainly hand harvested, although some are harvested by lifting them from the vines with flat-tined forks. The pumpkins are placed into trucks, trailers or on conveyors for loading.

Moderate storage temperatures are required, as pumpkins are sensitive to chilling injury. Temperatures of 50-59°F are recommended, as they are high enough to avoid chilling and low enough to prevent excessive ripening and weight loss due to respiration.

Careful handling to avoid injury from the time of harvest will help attain a maximum storage life. When in prolonged storage, pumpkins should be stored in a dry area on slotted shelves to allow maximum air circulation. Disinfecting facilities prior to storage will help keep diseases to a minimum.

Pumpkins can be stored at temperatures of 50-55°F for 2 to 3 months in a relative humidity of 50-75%.

Various crates are used for shipping, including the cantaloupe crate and 1-1/9 bushel crates. Bulk bins are also used.

Raspberries

High quality raspberries are fully colored, well developed, plump and free from damage or disease. Soft, overripe or broken berries are not desirable for marketing. An overripe or dead ripe raspberry is one in which immediate consumption is necessary, making it unsuitable for storage or marketing. Berries with adhering cores are usually an indication of immaturity.

Raspberries are hand picked in the cool morning hours before the fruit is exposed to the afternoon heat. Raspberries will separate readily from the calyx when mature. Raspberries are very perishable and are often harvested, stored and marketed in the same container to avoid excessive handling and damage. Raspberries are immediately precooled after harvest in precooling rooms or in forced-air coolers. Berries will maintain their fresh quality for only two to three days so they should be quickly marketed. Due to their perishability, raspberries are often packed and loaded immediately and then precooled in transit. The ideal storing conditions are temperatures of 31-32°F with a relative humidity of 90-95%. Findings have indicated that a controlled atmosphere containing levels of carbon dioxide at 20-25% will delay the ripening process and reduce decay.

Due to their limited keeping time, many raspberries are sold on a day-to-day basis. Berries that are shipped to market are usually packed in 5-1/2 to 7-1/2 pound fiberboard trays holding 12 half-pints, or in flats holding 12 pints with a net weight of 11 to 15 pounds.

Strawberries

Top market quality strawberries are fresh, firm, well developed, and have a bright, solid red or pink color covering at least three forths of the berry's surface. The caps (calyx) should be attached and there should be no sign of damage or disease. Each berry should be not less than three quarters of an inch in diameter. Undeveloped strawberries that do not attain a normal shape from frost injury, lack of pollination or insect injury are not suitable for marketing.

Berries with a dull or shrunken appearance usually indicate over-ripeness and are unfit for shipping.

Strawberries for the fresh market are hand harvested. Care should be taken not to allow picked berries to sit in the sun after harvesting, as they deteriorate rapidly. Strawberries are picked on the basis of color. Multiple pickings are required to adequately harvest for optimal yields and to avoid overripe berries. Fruits harvested at 1/2 to 3/4 red color will develop full color after harvest.

Precooling methods suitable for strawberries include room cooling and forced-air cooling. Berries should be cooled to below 40°F within two hours of harvest. The ideal conditions are to store the berries at 32°F with a relative humidity of 90-95%. Strawberries are very perishable and require careful handling. They must be kept cool and humid to maintain freshness and are usually only kept for a minimal length of time, seldom beyond five to seven days. Strawberries may begin to shrivel and loose color and flavor after several days of storage.

Strawberries which are shipped to markets are packed in fiberboard trays containing 12 pint containers or baskets made of paper or plastic. Two trays can be locked together by wire handles to simplify handling and stacking.

Fiberboard trays are designed so they can be stacked without damage to the berries in the lower trays. Two layer shelf crates which hold 16 quart baskets are still being used.

Carbon dioxide levels of 15% slow down the ripening process of fresh strawberries. Dry ice is often placed with shipments of strawberries to increase the carbon dioxide levels around the berries and retard the ripening process, although it is effective for only a short period of time.

Summer Squash

Summer squash are picked and eaten in the immature stage of development indicated by tender skin, undeveloped seeds and firm, moist seed cavity tissue. Summer squash ideal for marketing are firm, fairly well formed and have a shiny surface free from any physical injury. The stem or a portion of the stem is still attached. Varieties that are dark green should be entirely green, as yellowish areas are a sign of senescence and poor flavor. Dullness is also a sign of senescence. Avoid squash with pits on their surface (chilling injury) and those that are too far advanced in maturity to be used as summer squash.

Due to the differences in varieties and size preferences, no specific size requirements are required. Long squash varieties less than six inches in length and the round types with a diameter less than four inches are most desirable for marketing. Size is directly related to quality, as the smaller squash is more tender, has softer seeds and a more edible skin.

Summer squash is almost entirely hand harvested and kept only for a minimal time from harvest until marketing. Young squash is very tender and easily damaged. Sorters and packers often wear gloves during handling to prevent cuts from fingernails as marks and scuffs.

Summer squash is packaged and room cooled or cooled after being loaded for shipment. For periods of less than four days, the squash can be held at 32-40°F. If held longer than four to five days, the temperature should be at 45-50°F.

Relative humidity between 90-95% is required to prevent squash from becoming soft. Much of the summer squash marketed is waxed to prevent water loss, plus it adds visual appeal. Ice should not be used when packaging or shipping summer squash, due to the danger of chilling injury. Summer squash should never be stored or transported with ethylene producing crops such as cantaloupe or tomatoes, as the ethylene increases the the maturing process of the squash. Storage life for summer squash under ideal conditions is usually two weeks for fair to good quality.

Several types of containers are used for shipping summer squash. Due to the varying sizes, squash is sold by net poundage with no specific counts required. Containers commonly used include bushel baskets or crates with a net weight of 40-45 pounds, cartons and Los Angeles lugs with a net weight of 24 pounds, 1-1/9 bushel wirebound crates weighing 44 pounds and 1/2 bushel wirebound crates having a net weight of 21 pounds.

Sweet Corn

Top market sweet corn has well developed ears with kernels that are pale creamy-yellow, plump and a milky consistency.

The ears should be free of loose husks and the shank should not extend more than one inch beyond the point of attachment of the outside husk. Husks should be fresh and green and tightly enclose the entire ear, and silk ends should be free from decay or worm injury. Corn with dark yellow or dented kernels should be avoided. The length of each cob should be at least six inches in length.

Proper handling and quick cooling of sweet corn is necessary in maintaining a quality tasting product. Sweet corn is harvested by hand and mechanical harvesters, and is usually hand-sorted and graded. Prompt precooling to 32°F is required to ensure good quality, as sweet corn has a high rate of respiration and deteriorates quickly after harvest. Sucrose, the compound primarily responsible for the sweet flavor, changes rapidly into starch. The higher the temperature, the faster the sugar changes to starch, and the faster the corn loses quality.

Vacuum cooling or hydrocooling are equally effective precooling methods. When cooling on a large scale, vacuum cooling is more practical and efficient. Vacuum cooling can lower the corn temperature from 86°F to 41°F in 1/2 hour. The sweet corn needs to be pre-wetted when vacuum cooling to avoid wilting of the husks and denting of the kernels during marketing. Sweet corn can be hydrocooled effectively in crates or in bulk bins. Exposed ears held in a shower of ice water takes 60 minutes to cool, and crated sweet corn takes 80 minutes to cool. Hydrocooling followed y the application of liquid ice is an effectvie precooling procedure. The ice and water mixture forms a thin layer of ice around the corn keeping it cool and maintaining moisture content. Hydrocooling, liquid icing or top-icing all require the use of water resistant containers.

Sweet corn has a short storage life regardless of the precooling method used, as the sweetness and tenderness are rapidly lost, the exception being new high sugar sweet corn. Husks make an excellent protective package for sweet corn, but it is only good when the temperature is held below 41°F and there is high humidity. When these conditions are not met, the husks will draw moisture from the kernels through the shank causing the kernels to dent. For best results the flag leaves should be removed and the shanks should be trimmed to 1/4 inch prior to storage or shipping. The ideal conditions are to quickly cool the corn to 41°F, then continue cooling it down and maintaining it at 32°F with a relative humidity of 85-90%. Adequate ventilation is also important. Prime quality can be maintained for 4-8 days at 32°F. Sweet corn can be adequately stored at 41°F for 3-5 days, and at 50°F for 2 days.

The most common shipping containers for sweet corn are wirebound crates containing 40-60 pounds. Mesh or multiwall bags containing 45-50 pounds are also used. The usual count for crates and sacks is five dozen ears of similar varietal characteristics.

Tomatoes

Tomatoes used for the fresh market should be clean, well developed, fairly well formed, smooth and free from any damage or decay. Overripe, soft or puffy tomatoes are undesirable, as soft tomatoes become watery. Puffy tomatoes are those that have locules filled with air rather than cellular material. Unwanted puffy tomatoes can be culled by floatation in specific gravity solutions. Puffy light tomatoes will float at an angle near the surface while normal good quality fruits will sink below the surface with the stem end above the blossom end. The angle of the puffy tomato stem is often an indication to its degree of puffiness.

Fresh tomatoes are marketed at the following size designations:

	Diameter Minimum/Maximum (In Inches)
Extra small:	1 28/32 to 2 4/32
Small:	2 4/32 to 2 9/32
Medium:	2 9/32 to 2 17/32
Large:	2 17/32 to 2 28/32
Extra large:	2 28/32 to 3 15/32
Maximum large:	3 15/32

Processing tomatoes must be firm and not water-soaked to the extent that it will lose more than 10% of its weight during the peeling or washing process. Processing tomatoes should have at least two thirds of its flesh having a good red color, and should be free from worm injury, freezing, damage and disease. Stems should never be over one inch in length. Italian type tomatoes used for processing as whole tomatoes should be firm, fairly well formed, and free from disease and damage. They should be well colored, having 90% or more of their surface showing a ripe red color. Soft, puffy, shriveled or watersoaked tomatoes are not desirable.

Fresh market tomatoes are harvested at a variety of stages from mature-green to pink, depending on the cultivar and the potential market. Color is an indication of the stage of ripeness. A tomato is considered mature if it has reached the stage of development which will ensure proper completion of the ripening process. The contents of two or more seed cavities must have developed a jelly-like consistency, and the seeds must be well developed. A 'mature-green' tomato is one which is completely light green in color, has a waxy surface and the skin is not readily scraped off with a fingernail. Tomatoes picked 'mature-green' can ripen into fully colored tomatoes with good flavor if held at a proper temperature. Immature green tomatoes, dark green in color, will not ripen properly and usually remain yellowish to pale red, having poor flavor. A 'breaker' is a tomato which shows a definite break in color from green to tannish-yellow, pink or red on not more than 10% of the surface. A 'turning' tomato is one which has between 10% and 30% showing a definite change in color from green to tannish-yellow, pink, red or a combination of these. A 'pink' tomato has 30-60 % of the surface showing pink or red color. A 'light red' tomato has 60% to 90% of its surface showing a pinkish red or red. A 'red' tomato has more than 90% of its surface showing a red color.

Careful harvesting and handling is crucial to the maintenance of good tomato quality, as they are delicate and easily damaged, and bruising will hasten spoilage. Fresh market tomatoes are basically hand harvested, as several pickings are often necessary for proper harvesting. Processing tomatoes are usually machine harvested. Fresh market tomatoes are transported to the packing house where they are washed, hand sorted for color and grade, and machine sorted for size. Tomatoes are often waxed to reduce moisture loss and to improve visual appeal.

The necessity for precooling is determined by the degree of ripeness of the fruit and the time-table for ripening. Room cooling is the most widely used precooling method, with some hydrocooling being done in California. If hydrocooling, the tomatoes should be sprayed with cold water rather than emmersed, as the fruits may take up water and crack their skins. Chlorinated water should also be used to guard against disease. 'Mature-green' and 'breakers' do not require precooling unless the tomatoes are warmer than 80°F, or there is a need to delay ripening. These tomatoes are susceptible to chilling injury at temperatures under 50°F. Unless ripening is to be delayed, the desired temperature range is between 55-65°F 'Turning' or riper tomatoes are less sensitive to chilling injury.

These fruit can be kept at 50-55°F for four to seven days if a delay in ripening is desired. 'Pink' tomatoes are even less susceptible to chilling injury and can be held at 41°F for four days. If a delay in ripening is not desired, temperatures of 50-55°F is preferred. The recommended storage life for ripe tomatoes is two to four days at 32-40°F, although the length of time may vary between cultivars and the initial quality of the fruit. If held at low temperatures too long tomatoes tend to soften and lose their color, flavor and aroma.

To promote uniform ripening of tomatoes, a temperature of 65-70°F is recommended. Tomatoes should be stored in a relative humidity of 85-90%. Exposure to light is not necessary for proper ripening. Ethylene can be used to aid in the rapid and uniform ripening of 'mature-green' tomatoes. Riper fruit produces enough ethylene on its own that it does not benefit from additional amounts.

Tomatoes are sold by types rather than by varieties. 'Pinks' seem to be the most popular tomato with institutional buyers, while wholesale grocers prefer 'breakers'.

Tomatoes are shipped in a variety of containers. 'Mature-green' tomatoes used to be shipped almost entirely in LA lugs with fruits individually wrapped is tissue paper. The wrap-pack is no longer used for mature-green fruit due to the high labor costs. These tomatoes are jumble-packed in 60 pound wirebound crates, in 40 pound fiberboard boxes or in LA lugs. In jumble-packing the tomatoes are mechanically diverted into boxes and filled by count or weight. Vine ripe or pink tomatoes are usually shipped in nailed wood flats or lugs with medium and large fruits packed in two layers and smaller fruits packed in three layers. Preformed plastic trays are sometimes used. Tray-packed cartons with uniform sizes of 5 x 5, 5 x 6 or 5 x 7 are common, as well as loose-packed cartons. Hothouse tomatoes are often packed and shipped in wood or fiberboard flats or in veneer or fiberboard baskets. Greenhouse and cherry-type tomatoes are shipped in baskets averaging 10 pounds net weight. Cherry tomatoes are also packed in lugs containing 12 pint baskets.

Watermelon

Quality watermelons should be mature, symmetrical in shape, fresh-looking with an attractive waxy bloom and free from any sign of damage or disease. The underside of the melon should be yellowish where it was in contact with the ground. A hard, white or pale green underside usually indicates immaturity.

It is important that the watermelons are picked mature, as the total sugar does not increase once harvested. A mature melon is one which has reached the stage of development where the flesh is at least fairly sweet and shows the characteristic color of a mature melon of its variety. An overripe melon is one which has reached an advanced stage of maturity where the flesh becomes mealy, less juicy and may have an insipid taste. A melon of very good internal quality will contain not less than 10% soluble solids in the combined juice from the edible portion of a sampling of melons, as determined by an approved refractometer. The flesh near the center of the melon should be tested, as flesh near the rind is about 3% lower in soluble solids, and the stem end is 2% lower than the blossom end. Melons seem to be of the best quality when harvested 45 days after bloom when soluble solids are around 12-13%.

Size of melons is important, as the larger melons have more edibe flesh proportionate to their weight than smaller melons. Melon size may be determined by average weight, minimum weight, or minimum and maximum weight.

When the size is specified in terms of average weight, the melons in any lot should not vary more than 3 pounds below the stated average, and melons in lots over 30 pounds should not vary more than 5 pounds below the stated average. When minimum and maximum weights are specified, all melons must weigh within the specified range.

Watermelons do not store well and usually are not held for long periods of time. Melons are sensitive to chilling and should be held at moderate temperatures of 45-50°F, as temperatures below 50°F cause the melons to begin losing their color, and at temperatures below 32°F they become pitted and tend to develop an off-flavor. Flavor and color of watermelons does improve during short periods of storage at or close to room temperature. Melons can be stored at 65-70°F for about seven days. Watermelons which have been properly harvested should not deteriorate quickly and can be stored with good success at 55-59°F for periods up to two weeks. If stored for more than two weeks, temperatures of 45-50°F are recommended. Watermelons do not readily lose moisture, so exact humidity is not necessary, although a relative humidity of 80-90% is suggested.

Mechanical injury and bruises to melons can be avoided by proper handling and loading. Floors of trailers and trucks should be adequately padded. Handling melons when they are warm is preferred, as melons are more subject to injury when cool and turgid. Load heights should be limited to 3 to 5 melons. Most melons are loaded crosswise, as this packing method seems to lessen their chance of being damaged. Shipping watermelon in containers is becoming more popular rather than loading melon directly onto railcars or trucks, as containers helps to reduce damage and lessens the loading and unloading time.

There are a number of different containers and methods used to ship melons. Small and medium size bulk bins, and WGA crates and cartons holding 3-5 melons are most common. Collapsible re-usable bins contructed of wood or corrugated fiberboard are sometimes used for shipping.

Winter Squash

Commonly grown types of winter squash include acorn, hubbard and butternut. Winter squash is harvested when mature, having reached the stage of development indicative of good handling and keeping quality. Desirable squash for marketing has a hard rind and a dried stem, and is free from damage or disease. The squash should be heavy for its size, as lighter weights tend to indicate dry and stringy flesh. An acorn squash will show a slight amount of yellowish-orange on its dark green surface, and the butternut rind will be entirely buff to light tan with no greenish color. Avoid squash with cracks or breaks, or with shiny rinds.

Winter squash will keep for an extended period of time depending upon the variety. Maximum storage is attained by careful handling to avoid injury. Stems should be completely removed to avoid any damage during handling. Winter squash is sensitive to chilling and requires moderate storage temperatures of 50-55°F. Relative humidity levels should be low enough to reduce microrganism growth and decay, yet high enough to avoid excessive water and weight loss. An acorn squash will keep for 30-50 days at a temperature of 50°F and a relative humidity of 50%. Hubbard squash will keep 180 days at 50-55°F with a relative humidity of 70-75%. Butternut squash will keep well for 50 days when held at 50°F with a relative humidity of 50%. If the humidity is too low, the butternut will lose excessive moisture and weight, which leads to hollow neck, making the fruit inedible.

For prolonged storage, it is recommended to store the squash on slotted shelves that provide free air circulation and minimal contact between squash.

Winter squash is shipped in a variety of containers. Small squash is shipped in bushel baskets or crates holding 40-45 pounds of produce, in cartons or Los Angeles lugs, in 1-1/9 bushel wirebound crates and in half-bushel wirebound crates. Large squash is transported in bulk bins of various sizes.

Glossary Terms for Technical Information

Bloom - Wax deposit or coating on the surface of some fruits and vegetables.

Chilling injury - Damage to fresh produce inflicted by low, but nonfreezing temperatures.

Controlled atmosphere (CA) - Controlled atmospheric conditions used to prolong the storage life of fresh fruits and vegetables. Temperature, humidity, oxygen, carbon dioxide and nitrogen concentrations are controlled.

Ethylene - Active plant hormone produced by many plants that is involved in the ripening process. Ethylene can be used to speed the process of and increase the uniformity of ripening fruits and vegetables.

Fiberboard - A paper product contructed with a corrugated paper center and paper sheets attached to each side. (Cardboard)

Pallet - A horizontal platform used as a base for handling produce in a unit load. Pallets are easily handled on all sides by forklift trucks. Standard pallet size it 40 inches x 48 inches or 100 cm x 120 cm.

Refractometer - An instrument for measuring the refractive index of a substance. Refractometers are used to measure the soluble solids in fruits such as cantaloupe and watermelon.

Relative humidity - The ratio of water vapor in the air to the maximum amount it can hold at the same temperature. Is usually given as a percentage.

Senescence - The life phase from maturity to death when growth has ceased and aging processes predominate.

Sunscald - Injury caused by sun and heat.

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Visual Masters
and
Activity Sheets

CONTAINERS

- BAGS
- FIBERBOARD BOXES
- WIREBOUND BOXES
- PLASTIC CONTAINERS
- BULK BINS
- LUGS

PRECOOLING METHODS

- ROOM COOLING
- FORCED-AIR COOLING
- HYDROCOOLING
- PACKAGE-ICING
- VACUUM COOLING

SUITABILITY OF COOLING

COOLING METHOD	COMMODITIES	COMMENTS
ROOM COOLING PERISHABLE	ALL COMMODITIES	TOO SLOW FOR MANY COMMODITIES. COOLING RATES VARY EXTENSIVELY WITHIN LOADS, PALLETS AND CONTAINERS.
FORCED-AIR COOLING (PRESSURE COOLING)	FRUITS, BERRIES FRUIT-TYPE VEGETABLES TUBERS, CAULIFLOWER CUT FLOWERS	MUCH FASTER THAN ROOM COOLING; COOLING RATES VERY UNIFORM IF PROPERLY USED. CONTAINER VENTING AND STACKING REQUIREMENTS ARE CRITICAL TO EFFECTIVE COOLING.
HYDROCOOLING	STEMS, LEAFY VEGETABLES, SOME FRUITS AND FRUIT-TYPE VEGETABLES	VERY FAST COOLING; UNIFORM COOLING IN BULK IF PROPERLY USED, BUT MAY VARY EXTENSIVELY IN PACKED SHIPPING CONTAINERS; DAILY CLEANING AND SANITATION MEASURES ESSENTIAL; PRODUCT MUST TOLERATE WETTING; WATER-TOLERANT SHIPPING CONTAINERS MAY BE NEEDED.
PACKAGE-ICING	ROOTS, STEMS SOME FLOWER-TYPE VEGETABLES, GREEN ONIONS, BRUSSELS SPROUTS	FAST COOLING; LIMITED TO COMMODITIES THAT CAN TOLERATE WATER-ICE CONTACT; WATER-TOLERANT SHIPPING CONTAINERS ARE ESSENTIAL.
VACUUM COOLING	LEAFY VEGETABLES; SOME STEM AND FLOWER-TYPE VEGETABLES	COMMODITIES MUST HAVE A FAVORABLE SURFACE-TO-MASS RATIO FOR EFFECTIVE COOLING. CAUSES ABOUT 1% WEIGHT LOSS FOR EACH 6°C COOLED. A PROCEDURE THAT ADDS WATER DURING COOLING PREVENTS THIS WEIGHT LOSS BUT EQUIPMENT IS MORE EXPENSIVE, AND WATER-TOLERANT SHIPPING CONTAINERS ARE NEEDED.
TRANSIT COOLING		
MECHANICAL REFRIGERATION	ALL COMMODITIES	COOLING IN MOST AVAILABLE EQUIPMENT IS TOO SLOW AND VARIABLE; GENERALLY NOT EFFECTIVE.
TOP-ICING AND CHANNEL-ICING	SOME ROOTS, STEMS, LEAFY VEGETABLES CANTALOUPES	SLOW AND IRREGULAR, TOP-ICE WEIGHT REDUCES NET PAY LOAD; WATER-TOLERANT SHIPPING CONTAINERS NEEDED.

BROCCOLI

QUALITY STANDARDS:

- FIRM, COMPACT CLUSTER OF SMALL FLOWER BUDS
- CLUSTERS DARK GREEN OR SAGE, MAY HAVE A PURPLISH CAST
- BUNCHED
- FREE FROM DECAY
- NEATLY AND EVENLY CUT
- DIAMETER OF HEAD NOT LESS THAN 2-1/2 INCHES
- STEM LENGTH BETWEEN 6 INCHES AND 8-1/2 INCHES

PRECOOLING:	LIQUID ICE HYDROCOOLING VACUUM COOLING HYDROVAC COOLING FORCED-AIR

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE:	32 DEGREES F.
RELATIVE HUMIDITY LEVEL:	90 - 95%
MAXIMUM HOLDING DAYS:	10 - 14 DAYS

ADDITIONAL INFORMATION:

- CONTROLLED ATMOSPHERE CAN DOUBLE STORAGE LIFE
- 10% CO_2 RETARDS YELLOWING, RETARDS TOUGHENING, AND PREVENTS MOLDING
- AVOID STORING WITH HIGH ETHYLENE PRODUCING PRODUCTS

SHIPPING CONTAINERS:

PONY CRATE HOLDING 40 - 42 POUNDS
CARTONS OR CRATES WITH 14 BUNCHES WEIGHING 20 - 23 POUNDS

BRUSSELS SPROUTS

QUALITY STANDARDS:

- FIRM, COMPACT HEADS
- WELL - COLORED
- INNER LEAVES TIGHTLY ARRANGED
- 1 INCH DIAMETER

PRECOOLING: VACCUM COOLING
HYDROCOOLING

STORAGE:

IDEAL TEMPERATURE: 32 DEGREES F.
RELATIVE HUMIDITY LEVEL: 90 - 95%
MAXIMUM HOLDING DAYS: 1 MONTH
ADDITIONAL INFORMATION:

- CA STORAGE HELPS RETARD YELLOWING
- OFTEN TOP-ICED FOR SHIPMENT OR STORAGE
- PACKAGING IN VENTED BAGS OR OVERWRAPPED IN WAXED CUPS HELPS REDUCE WILTING

SHIPPING CONTAINERS:

LOOSE PACK CARTONS HOLDING 25 POUNDS
FLATS OF 12 COUNT 10-OUNCE CUPS HOLDING 7-1/2 TO 8 POUNDS

CABBAGE

QUALITY STANDARDS:

- SOLID, HARD HEADS, HEAVY FOR THEIR SIZE
- LEAVES FIRMLY ATTACHED TO STEM
- INTERNAL LEAVES TIGHTLY PACKED
- POINTED CABBAGE:
  - SMALL...1-1/2 POUNDS OR LESS
  - MEDIUM...1-1/2 ¼ 3 POUNDS
  - LARGE...3 POUNDS OR MORE
- DANISH AND DOMESTIC CABBAGE:
  - SMALL...2 POUNDS OR LESS
  - MEDIUM...2 ¼ 5 POUNDS
  - LARGE...5 POUNDS OR MORE

PRECOOLING:
ROOM COOLING
HYDROCOOLING
FORCED-AIR COOLING
TOP-ICED

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE: 32 DEGREES F.
RELATIVE HUMIDITY LEVEL: 90 - 95%
MAXIMUM HOLDING DAYS: 3 - 6 WEEKS FOR EARLY CABBAGE
3 - 4 MONTHS FOR LATE CABBAGE
ADDITIONAL INFORMATION:

- STEMS TRIMMED TO 1/2 INCH
- LOOSE LEAVES REMOVED BEFORE STORAGE FOR BETTER VENTILATION
- SEVERAL TIGHT WRAPPER LEAVES LEFT ON TO PROTECT HEAD
- DO NOT STORE WITH HIGH ETHYLENE PRODUCING CROPS

SHIPPING CONTAINERS:

FLAT CRATES CONTAINING 53 TO 60 POUNDS
MESH BAGS HOLDING 50 POUNDS
CARTONS HOLDING 53 POUNDS

CANTALOUPE

QUALITY STANDARDS:

- ROUNDED DEPRESSED SCAR AT TIP END
- SMOOTHLY ROUNDED
- COVERED WITH DENSE AND PROMINENT NETTING
- NOT LESS THAN 9% SOLUABLE SOLIDS
- AT LEAST 5 INCHES IN DIAMETER

PRECOOLING: HYDROCOOLING
FORCED-AIR
TOP-ICING

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE: 40 - 50 DEGREES F.
RELATIVE HUMIDITY LEVEL: 85 - 90%
MAXIMUM HOLDING DAYS: 12 - 16 DAYS
ADDITIONAL INFORMATION:

- STORAGE LIFE IS DIRECTLY RELATED TO DEGREE OF RIPENESS
- MELONS SHOULD BE SHIPPED IN MATURE STAGE TO AVOID DAMAGE

SHIPPING CONTAINERS:

- ONE-HALF CARTONS WEIGHING 38 - 41 POUNDS AND PACKING 9, 12, 18, OR 23 MELONS
- TWO-THIRD CARTONS AND CRATES HOLDING 53 - 55 POUNDS
- JUMBO CRATES HOLDING 80 - 85 POUNDS
- STANDARD CRATES HOLDING 70 - 80 POUNDS
- ONE-HALF WIREBOUND CRATES HOLDING 45 - 50 POUNDS

CAULIFLOWER

QUALITY STANDARDS:

- SNOW WHITE OR CREAMY WHITE CURDS
- SOLID, COMPACT CURDS
- CURDS SURROUNDED BY TURGID GREEN LEAVES
- CLEAN HEADS
- FREE FROM DAMAGE AND DECAY
- NO LESS THAN 4 INCHES IN DIAMETER

PRECOOLING: HYDROCOOLING
VACUUM COOLING

STORAGE REQUIREMENTS:
IDEAL TEMPERATURE: 32 DEGREES F.
RELATIVE HUMIDITY LEVEL: 85 - 90%
MAXIMUM HOLDING DAYS: 2 WEEKS
ADDITIONAL INFORMATION:

- HEADS OFTEN INDIVIDUALLY WRAPPED IN PERFORATED FILM
- HEADS OFTEN STORED WITH HEADS DOWN TO PREVENT MOISTURE FROM ACCUMULATING ON CURDS

SHIPPING CONTAINERS:

CARTONS WITH 12, 14, OR 16 HEADS WEIGHING 21 TO 25 POUNDS
WIREBOUND CRATES WEIGHING 45 - 50 POUNDS

KOHLRABI

QUALITY STANDARDS:

- GREEN OR PURPLE COLOR (DEPENDING ON VARIETY)
- CLEAN
- YOUNG SMALL GLOBES
- HEALTH GREEN LEAVES
- 2 TO 3 INCHES IN DIAMETER

PRECOOLING:	HYDROCOOLING

STORAGE REQUIREMENTS:

IDEAL TERMPERATURE:	32 DEGREES F.
RELATIVE HUMIDITY LEVEL:	95%
MAXIMUM HOLDING DAYS:	ONE MONTH

ADDITION INFORMATION:

- PACKING IN PERFORATED FILM HELPS TOPPED KOHLRABI MAINTAIN MOISTURE AND FRESHNESS
- NOT CURRENTLY SOLD IN LARGE QUANTITIES ON THE FRESH PRODUCE MARKET

POTATOES

QUALITY STANDARDS:

FRESH MARKET...
- WELL-SHAPED,
- FREE FROM DAMAGE OR DISEASE
- SKINS FIRMLY SET WITH LITTLE MISSING OR FEATHERED SKIN
- NOT LESS THAN 2-1/4 INCHES IN DIAMETER OR 5 OUNCES IN WEIGHT

PROCESSING MARKET...
- WELL-SHAPED
- FREE FROM DAMAGE OR DISEASE
- NOT SERIOUSLY SHRIVELED OR FLABBY
- NOT LESS THAN 2 INCHES IN DIAMETER OR 4 OUNCES IN WEIGHT

CHIPPING POTATOES...
- FIRM, CLEAN, AND FAIRLY WELL-SHAPED
- FREE FROM DAMAGE OR DISEASE
- NOT LESS THAN 1-7/8 INCHES IN DIAMETER

PRECOOLING: ROOM COOLING
FORCED-AIR COOLING

STORAGE REQUIREMENTS:

FRESH MARKET...

IDEAL TEMPERATURE:	38 - 40 DEGREES F.
RELATIVE HUMIDITY:	90%
MAXIMUM HOLDING DAYS:	NINE MONTHS TO ONE YEAR

PROCESSING MARKET...

IDEAL TEMPERATURE:	48 - 60 DEGREE F.
RELATIVE HUMIDITY:	90%
MAXIMUM HOLDING DAYS:	VARIES

ADDITIONAL INFORMATION:
- POTATOES ARE CURED BEFORE GOING INTO STORAGE
- PROCESSING POTATOES ARE CURED AND STORED AT HIGHER TEMPERATURES TO AVOID SUGAR ACCUMULATIONS WHICH OCCURS AT LOWER TEMPERATURES
- POTATOES ARE OFTEN COOLED AND STORED UNWASHED AND THEN CLEANED BEFORE BEING MARKETED
- A SPROUT INHIBITOR IS USED IF STORED FOR MORE THAN TWO MONTHS

SHIPPING CONTAINERS:
100 POUND BAGS
50 POUND CARTONS AND BAGS
20 POUND FILM BAGS
10 POUND FILM BAGS
FIBERBOARD BOXES HOLDING 50 POUNDS

PUMPKINS

QUALITY STANDARDS:

- WELL MATURED
- CLEAN
- RICH ORANGE COLOR
- HEAVY FOR SIZE

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE: 50 - 55 DEGREES F.
RELATIVE HUMIDITY LEVEL: 50 - 75%
MAXIMUM HOLDING DAYS: 2 - 3 MONTHS
ADDITIONAL INFORMATION:

- SENSITIVE TO CHILLING INJURY

SHIPPING CONTAINERS:

CANTALOUPE CRATE
1-1/9 BUSHEL CRATES
BULK BINS

RASPBERRIES

QUALITY STANDARDS:

- FULLY COLORED
- WELL DEVELOPED
- PLUMP
- FREE FROM DAMAGE AND DISEASE

PRECOOLING:	ROOM COOLING FORCED-AIR

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE:	31-32 DEGREES F.
RELATIVE HUMIDITY LEVEL:	90-95%
MAXIMUM HOLDING DAYS:	2-3 DAYS

ADDITIONAL INFORMATION:

- CONTROLLED ATMOSPHERE OF 20-25% CARBON DIOXIDE WILL DELAY RIPENING PROCESS
- DUE TO THEIR PERISHABILITY, RASPBERRIES ARE OFTEN SOLD ON A DAY-TO-DAY BASIS

SHIPPING CONTAINERS:

5-1/2 TO 7-1/2 POUND FIBERBOARD TRAYS HOLDING 12 PINTS WITH A NET WEIGHT OF 11 TO 15 POUNDS

STRAWBERRIES

QUALITY STANDARDS:

- FRESH, FIRM AND WELL-DEVELOPED
- BRIGHT, SOLID RED OR PINK COLOR COVERING AT LEAST 3/4 OF BERRY'S SURFACE
- CALYX ATTACHED
- NOT LESS THAN THREE QUARTERS OF AN INCH IN DIAMETER

PRECOOLING:	ROOM COOLING FORCED-AIR COOLING

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE:	32 DEGREE F.
RELATIVE HUMIDITY LEVEL:	90 - 95%
MAXIMUM HOLDING DAYS:	5 - 7 DAYS

ADDITIONAL INFORMATION:

- VERY PERISHABLE, MUST BE KEPT COOL AND HUMID TO MAINTAIN FRESHNESS

CO_2 LEVEL OF 15% SLOWS RIPENING PROCESS

SHIPPING CONTAINERS:

FIBERBOARD TRAYS CONTAINING 12 PINTS CONTAINERS OR BASKETS

SUMMER SQUASH

QUALITY STANDARDS:

- FIRM, FAIRLY WELL-FORMED
- SHINY SURFACE, FREE FROM DAMAGE OR DISEASE
- LONG VARIETIES LESS THAN 6 INCHES IN LENGTH
- ROUND TYPES WITH A DIAMETER LESS THAN 4 INCHES
- IMMATURE

PRECOOLING: ROOM COOLED

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE: 32 - 40 DEGREE F.
RELATIVE HUMIDITY LEVEL: 90 - 95%
MAXIMUM HOLDING DAYS: 4 - 5 DAYS
ADDITIONAL INFORMATION:

- OFTEN WAXED TO HELP RETAIN MOISTURE
- NEVER STORED WITH HIGH ETHYLENE PRODUCING PRODUCTS

SHIPPING CONTAINERS:

BUSHEL BASKETS OR CRATES WITH NET WEIGHT OF 40 - 45 POUNDS
LOS ANGELES LUGS WITH NET WEIGHT OF 24 POUNDS
1-1/9 BUSHEL WIREBOUND CRATES WEIGHING 44 POUNDS
1/2 BUSHEL WIREBOUND CRATES WITH NET WEIGHT OF 21 POUNDS

SWEET CORN

QUALITY STANDARDS:

- WELL DEVELOPED EARS
- KERNALS PALE, CREAMY-YELLOW, PLUMP, MILKY CONSISTENCY
- HUSKS FRESH, GREEN, TIGHTLY ENCLOSING ENTIRE EAR
- SILK ENDS FREE FROM DECAY AND WORM DAMAGE
- EARS AT LEAST SIX INCHES LONG

PRECOOLING:	VACUUM COOLING HYDROCOOLING LIQUID ICE TOP-ICING

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE:	32 DEGREES F.
RELATIVE HUMIDITY LEVEL:	85-90%
MAXIMUM HOLDING DAYS:	3-5 DAYS

ADDITIONAL INFORMATION:

- MUST BE QUICKLY COOLED TO MAINTAIN QUALITY, AS SUCROSE, THE COMPOUND RESPONSIBLE FOR SWEET FLAVOR, RAPIDLY CHANGES TO STARCH
- HUSKS WILL DRAW MOISTURE FROM KERNALS IF NOT STORED AT PROPER TEMPERATURE WITH ADEQUATE HUMIDITY

SHIPPING CONTAINERS:

WIREBOUND CRATES CONTAINING 40-60 POUNDS
MESH OR MULTIWALL BAGS CONTAINING 45-50 POUNDS

TOMATOES

QUALITY STANDARDS FOR FRESH MARKET TOMATO:

- CLEAN,
- WELL DEVELOPED,
- WELL FORMED, SMOOTH, NOT PUFFY
- FREE FROM DAMAGE AND DECAY

QUALITY STANDARDS FOR PROCESSING TOMATOES:

- FIRM, NOT WATER SOAKED
- AT LEAST TWO THIRDS OF FLESH RED COLORED
- FREE FROM DAMAGE OR DECAY

PRECOOLING: ROOM COOLING IS THE PREFERRED METHOD

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE:	50-70 DEGREES F.
RELATIVE HUMIDITY LEVEL:	85-88%
MAXIMUM HOLDING DAYS:	VARIES WITH STORAGE CONDITIONS AND DEGREE OF RIPENESS

SHIPPING CONTAINERS:

'MATURE-GREENS:	JUMBLE-PACKED IN 60 POUND WIREBOUND CRATES 40 POUND FIBERBOARD BOXES LA LUGS
'VINE RIPE':	NAILED FLATS OR LUGS WITH MEDIUM AND LARGE FRUITS PACKED IN TWO LAYERS, SMALLER FRUITS IN THREE LAYERS TRAY-PACKED CARTONS (UNIFORM SIZES OF 5 X 5, 5 X 6, 5 X 7) LOOSE-PACK CARTON
GREEN HOUSE OR CHERRY TOMATOES	BASKETS AVERAGING 10 POUNDS LUGS CONTAINING 12 PINT BASKETS

WATERMELON

QUALITY STANDARDS:

- MATURE
- WAXY BLOOM
- SYMMETRICAL SHAPE
- FREE FROM DAMAGE OR DISEASE
- UNDERSIDE OF MELON YELLOWISH WHERE IT WAS IN CONTACT WITH THE GROUND
- NOT LESS THAN 10% SOLUBLE SOLIDS

PRECOOLILNG: ROOM COOLING

STORAGE REQUIREMENTS:

IDEAL TEMPERATURE: 65-70 DEGREES F.
RELATIVE HUMIDITY LEVEL: 80-90%
MAXIMUM HOLDING DAYS: 7 DAYS
ADDITIONAL INFORMATION:

- MELONS CAN BE HELD FOR UP TO TWO WEEKS AT 55-59 DEGREES F.
- FLAVOR AND COLOR OF MELONS IMPROVES DURING SHORT PERIODS OF STORAGE AT OR NEAR ROOM TEMPERATURE

SHIPPING CONTAINERS:

SMALL AND MEDIUM SIZE BULK BINS
WGA CRATES AND CARTONS HOLDING THREE TO FIVE MELONS

WINTER SQUASH

QUALITY STANDARDS:

* HARD RIND
* DRIED STEM
* HEAVY FOR ITS SIZE
* FREE FROM DAMAGE OR DECAY
* BUTTERNUT BUFF TO LIGHT TAN WITH NO GREENISH COLOR

PRECOOLING: ROOM COOLED

STORAGE REQUIREMENTS:

ACORN...	
IDEAL TEMPERATURE:	50 - 55 DEGREES F.
RELATIVE HUMIDITY:	50%
MAXIMUM HOLDING DAYS:	30 - 50 DAYS
HUBBARD...	
IDEAL TEMPERATURE:	50 - 55 DEGREES F.
RELATIVE HUMIDITY:	70 - 75%
MAXIMUM HOLDING DAYS:	180 DAYS
BUTTERNUT...	
IDEAL TEMPERATURE:	50 DEGREES F.
RELATIVE HUMIDITY:	50%
MAXIMUM HOLDING DAYS:	50 DAYS

SHIPPING CONTAINERS:

BUSHEL BASKETS OR CRATES HOLDING 40 - 45 POUNDS
CARTONS OR LOS ANGELES LUGS
1-1/9 BUSHELS WIREBOUND CRATES
HALF-BUSHEL WIREBOUND CRATES
BULK BINS OF VARIOUS SIZES

UNITED STATES STANDARDS FOR GRADES OF POTATOES[1]

(35 F.R. 18257)

Effective September 1, 1971

As amended February 5, 1972 (37 F.R. 2745)

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GRADES

§ 51.1540 U.S. Extra No. 1.

"U.S. Extra No. 1" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;
(b) Firm;
(c) Clean;
(d) At least fairly well matured;
(e) Fairly well shaped, with 50 percent or more well shaped;
(f) Free from:
(1) Freezing;
(2) Blackheart;
(3) Late blight, southern bacterial wilt and ring rot; and,
(4) Soft rot and wet breakdown.
(g) Free from injury caused by:
(1) Sprouts; and,
(2) Internal defects.
(h) Free from damage by any other cause. See §§ 51.1564 and .51.1565.
(i) Size. The potatoes shall be not less than 2¼ inches in diameter or 5 ounces in weight and shall not vary more than 1¾ inches in diameter or more than 6 ounces in weight.
(j) For tolerances see § 51.1546.

§ 51.1541 U.S. No. 1.

"U.S. No. 1" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;
(b) Firm;
(c) Fairly clean;[2]
(d) Fairly well shaped;
(e) Free from:
(1) Freezing;
(2) Blackheart;
(3) Late blight, southern bacterial wilt and ring rot; and,
(4) Soft rot and wet breakdown.

(f) Free from damage by any other cause. See §§ 51.1564 and · 51.1565.
(g) Size. Not less than 1⅞ inches in diameter, unless otherwise specified in connection with the grade.
(h) For tolerances see § 51.1546.

§ 51.1542 U.S. Commercial.

"U.S. Commercial" consists of potatoes which meet the requirements of U.S. No. 1 grade except for the following:

(a) Free from serious damage caused by:
(1) Dirt or other foreign matter;
(2) Russet scab; and,
(3) Rhizoctonia.
(b) Increased tolerances for defects specified in § 51.1546.

§ 51.1543 U.S. No. 2.

"U.S. No. 2" consists of potatoes which meet the following requirements:

(a) Similar varietal characteristics;
(b) Not seriously misshapen;
(c) Free from:
(1) Freezing;
(2) Blackheart;
(3) Late blight, southern bacterial wilt and ring rot; and,
(4) Soft rot and wet breakdown.
(d) Free from serious damage by any other cause. See §§ 51.1564 and 51.1565.
(e) Size. Not less than 1½ inches in diameter, unless otherwise specified in connection with the grade.
(f) For tolerances see § 51.1546.

UNCLASSIFIED

§ 51.1544 Unclassified.

"Unclassified" consists of potatoes which have not been classified in accordance with any of the foregoing grades. The term "unclassified" is not a grade within the meaning of these standards but is provided as a designation to show that no grade has been applied to the lot.

SIZE

§ 51.1545 Size.

(a) The minimum size, or minimum and maximum sizes may be specified in connection with the grade in terms of diameter or weight of the individual potato, or in accordance with one of the size designations in Table I or Table II: *Provided*, That sizes so specified shall not be in conflict with the basic size requirements for the grade.

(b) When size is specified in terms of the customary sizes of potatoes packed to count in standard 50-pound cartons, the weight ranges shown in Table II shall apply. These size designations may be applied to potatoes packed in any size container: *Provided*, That the weight ranges are within the limits specified.

TABLE I

Size designation	Minimum diameter[1] or weight		Maximum diameter[1] or weight	
	Inches	*Ounces*	*Inches*	*Ounces*
Size A[2]	1⅞	(3)	(3)	(3)
Size B	1½	(3)	2¼	(3)
Small	1¾	(3)	2½	6
Medium	2¼	5	3¼	10
Large	3	10	4¼	16

[1] Diameter means the greatest dimension at right angles to the longitudinal axis, without regard to the position of the stem end.

[2] In addition to the minimum size specified, a lot of potatoes designated as Size A shall contain at least 40 percent of potatoes which are 2½ inches in diameter or larger or 6 ounces in weight or larger.

[3] No requirement.

TABLE II

Size designation	Minimum weight	Maximum weight
	Ounces	*Ounces*
Under 50	15	
50	12	19
60	10	16
70	9	15
80	8	13
90	7	12
100	6	10
110	5	9
120	4	8
130	4	8
140	4	8
Over 140	4	8

TOLERANCES

§ 51.1546 Tolerances.

In order to allow for variations incident to proper grading and handling in each of the foregoing grades, the following tolerances, by weight, are provided as specified:

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[1] Compliance with the provisions of these standards shall not excuse failure to comply with the provisions of the Federal Food, Drug and Cosmetic Act, or with applicable State laws and regulations.

[2] Potatoes in containers bearing official State Seed Certification Tags and Seals are not required to be fairly clean but shall be free from damage by dirt.

III-40A

VM-CS-19

(a) *For defects*—(1) *U.S. Extra No. 1.* A total of 5 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided,* That not more than two-fifths of this tolerance, or 2 percent, shall be allowed for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than one-half of 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 51.1547.

(2) *U.S. No. 1.* A total of 8 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided,* That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 5 percent for external defects;

(ii) 5 percent for internal defects; or,

(iii) 3 percent for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 51.1547.

(3) *U.S. Commercial.* A total of 20 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided,* That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 10 percent for potatoes which fail to meet the requirements for U.S. No. 2 grade, including therein not more than:

(ii) 6 percent for external defects;

(iii) 6 percent for internal defects; or,

(iv) 3 percent for potatoes which are affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 51.1547.

(4) *U.S. No. 2.* A total of 10 percent for potatoes in any lot which fail to meet the requirements for the grade: *Provided,* That included in this tolerance not more than the following percentages shall be allowed for the defects listed:

(i) 6 percent for external defects;

(ii) 6 percent for internal defects; or,

(iii) 3 percent for potatoes which affected by freezing, southern bacterial wilt, ring rot, late blight, soft rot or wet breakdown, including therein not more than 1 percent for potatoes which are frozen or affected by soft rot or wet breakdown. See § 51.1547.

(b) *For off-size.* (1) Not more than 3 percent of the potatoes in any lot may be smaller than the required or specified minimum size except that a tolerance of 5 percent shall be allowed for potatoes packed to meet a minimum size of 2¼ inches or larger in diameter or 5 ounces or more in weight. In addition, not more than 10 percent may be larger than any required or specified maximum size. See § 51.1547.

(2) When a percentage of the potatoes is specified to be of a certain size and larger, individual samples shall have not less than one-half of the percentage specified: *Provided,* That the average for the entire lot is not less than the percentage specified.

APPLICATION OF TOLERANCES

§ 51.1517 Application of tolerances.

Individual samples shall have no more than double the tolerances specified, except that at least one defective and one off-size potato may be permitted in any sample: *Provided,* That en route or at destination one-tenth of the samples may contain three times the tolerance permitted for potatoes which are frozen or affected by soft rot or wet breakdown: *And provided further,* That the averages for the entire lot are within the tolerances specified for the grade.

SAMPLES FOR GRADE AND SIZE DETERMINATION

§ 51.1518 Samples for grade and size determination.

Individual samples shall consist of at least 20 pounds. When individual packages contain at least 20 pounds, each individual sample is drawn from one package; when packages contain less than 20 pounds, a sufficient number of adjoining packages are opened to provide at least a 20-pound sample. The number of such individual samples drawn for grade and size determination will vary with the size of the lot.

SKINNING

§ 51.1549 Skinning.

(a) The following definitions provide a basis for describing lots of potatoes as to the degree of skinning whenever description may be appropriate:

(1) "Practically no skinning" means that not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered";

(2) "Slightly skinned" means that not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered";

(3) "Moderately skinned" means that not more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered"; and

(4) "Badly skinned" means that more than 10 percent of the potatoes in the lot have more than one-half of the skin missing or "feathered".

DEFINITIONS

§ 51.1550 Similar varietal characteristics.

"Similar varietal characteristics" means that the potatoes in any lot have the same general shape, color and character of skin, and color of flesh.

§ 51.1551 Firm.

"Firm" means that the potato is not shriveled or flabby.

§ 51.1552 Clean.

"Clean" means that at least 90 percent of the potatoes in any lot are practically free from dirt or staining and practically no loose dirt or other foreign matter is present in the container.

§ 51.1553 Fairly clean.

"Fairly clean" means that at least 90 percent of the potatoes in any lot are reasonably free from dirt or staining and not more than a slight amount of loose dirt or foreign matter is present in the container.

§ 51.1554 Mature.

"Mature" means that the skins of the potatoes are generally firmly set and not more than 5 percent of the potatoes in the lot have more than one-tenth of the skin missing or "feathered."

§ 51.1555 Fairly well matured.

"Fairly well matured" means that the skins of the potatoes are generally fairly firmly set and not more than 10 percent of the potatoes in the lot have more than one-fourth of the skin missing or "feathered."

§ 51.1556 Well shaped.

"Well shaped" means that the potato has the normal shape for the variety.

§ 51.1557 Fairly well shaped.

"Fairly well shaped" means that the potato is not materially pointed, dumbbell-shaped or otherwise materially deformed.

§ 51.1558 Seriously misshapen.

"Seriously misshapen" means that the potato is seriously pointed, dumbbell-shaped or otherwise badly deformed.

§ 51.1559 Injury.

"Injury" means any defect, or any combination of defects, which more than slightly detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any internal defect outside of or nor entirely confined within the vascular ring which cannot be removed without a loss of more than 3 percent of the total weight of the potato.

§ 51.1560 Damage.

"Damage" means any defect, or any combination of defects, which materially detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot be removed without a loss of more than 5 percent of the total weight of the potato. See Tables III and IV.

III-40B

VM-CS-19

§ 51.1561 Serious damage.

"Serious damage" means any defect, or any combination of defects, which seriously detracts from the edible or marketing quality, or the internal or external appearance of the potato, or any external defect which cannot be removed without a loss of more than 10 percent of the total weight of the potato. See Tables III and IV.

§ 51.1562 Freezing.

"Freezing" means that the potato is frozen or shows evidence of having been frozen.

§ 51.1563 Soft rot or wet breakdown.

"Soft rot or wet breakdown" means any soft, mushy, or leaky condition of the tissue such as slimy soft rot, leak, or wet breakdown following freezing injury.

§ 51.1564 External defects.

"External defects" are defects which can be detected externally. However, cutting may be required to determine the extent of the injury. Some external defects are listed in Table III.

TABLE III—EXTERNAL DEFECTS

Defect	Damage		Serious damage	
	or		*or*	
	When materially detracting from appearance of potato	When removal causes loss of more than 5 percent of total weight of potato	When seriously detracting from appearance of potato	When removal causes loss of more than 10 percent of total weight of potato
Air cracks	X		X	
Bruises	X	X	X	X
Dirt	X		X	
Enlarged lenticels	X		X	
External discoloration	X		X	
Flea Beetle injury	X	X	X	X
Greening	X	X	X	X
Rhizoctonia	X		X	
Scab, pitted	X	X	X	X
Scab, russet	X		X	
Scab, surface	When more than 5 percent of surface affected.		When more than 25 percent of surface affected.	
Sunburn		X		X
Second growth	X		X	
Growth cracks	X		X	

Defects	Damage	Serious damage[1]
Wireworm or grass damage	When any hole in a potato 2½ inches in diameter or 6 ounces in weight is more than ¾ inch long, or when the aggregate length of all holes is more than 1¼ inches, or correspondingly shorter or longer holes in smaller or larger potatoes.	When any hole in a potato 2½ inches in diameter or 6 ounces in weight is more than 1½ inches long, or when the aggregate length of all holes is more than 2 inches, or correspondingly shorter or longer holes in smaller or larger potatoes.
Insects or worms	(See serious damage)	When present inside the potato.
Artificial coloring	When unsightly or when concealing any defect causing damage or when penetrating the flesh and removal causes loss of more than 5 percent of total weight of potato.	When concealing a serious defect or when penetrating into the flesh and removal causes loss of more than 10 percent of total weight of potato.
Sprouts	When more than 10 percent of the potatoes in any lot have any sprout more than ¾ inch in length or have individual sprouts or clusters of sprouts which materially detract from the appearance of the potato.	

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[1] The following defects are considered serious damage when present in any degree:

1. Freezing.
2. Late blight.
3. Ring rot.
4. Southern bacterial wilt.
5. Soft rot.
6. Wet breakdown.

§ 565 Internal defects.

"Internal defects" are defects which cannot be detected without cutting the potato. Some internal defects are listed in Table IV.

TABLE IV—INTERNAL DEFECTS

Defect	Damage	Serious damage
Hollow Heart	When materially detracting from the internal appearance.	When seriously detracting from the internal appearance.
Ingrown sprouts	When removal causes a loss of more than 5 percent of the total weight of the potato.	When removal causes a loss of more than 10 percent of the total weight of the potato.
Internal discoloration occurring entirely within the vascular ring.	When more than the equivalent of 3 scattered light brown spots ⅛ inch in diameter in a potato 2½ inches in diameter or 6 ounces in weight, or correspondingly lesser or greater number of spots in smaller or larger potatoes.	When more than the equivalent of 6 scattered light brown spots ⅛ inch in diameter in a potato 2½ inches in diameter or 6 ounces in weight, or correspondingly lesser or greater number of spots in smaller or larger potatoes.
Internal discoloration outside of or not entirely confined within the vascular ring.	When removal causes a loss of more than 5 percent of the total weight of the potato.	When removal causes a loss of more than 10 percent of the total weight of the potato.

METRIC CONVERSION TABLE

§ 51.1566 Metric conversion table.

Inches	*Millimeters (mm)*
uals	3.2
uals	6.4
½ equals	12.7
¾ equals	19.1
1 equals	25.4
1½ equals	38.1
2 equals	50.8
2½ equals	63.5
3 equals	76.2
3½ equals	88.9
4 equals	101.6
4½ equals	114.3
Ounces	*Grams*
1 equals	28.35
4 equals	113.40
5 equals	141.75
6 equals	170.10
7 equals	198.45
8 equals	226.80
9 equals	255.15
10 equals	283.50
12 equals	340.20
14 equals	396.90
16 equals	453.60
18 equals	510.30
190 equals	538.60
20 equals	567.00

These standards shall become effective on September 1, 1971 and will thereupon supersede the United States Standards for Grades of Potatoes which have been in effect since July 15, 1958 (7 CFR 51.1540–51.1556).

Dated: November 23, 1970.

G. R. GRANGE,
Deputy Administrator,
Marketing Services.

[F.R. Doc. 70-15938; Filed, Nov. 27, 1970; 8:45 a.m.]

AUTHORITY: The provisions of this subpart issued under secs. 203, 205, 60 Stat. 1087, as amended, 1090 as amended; 7 U.S.C. 1622, 1624.

☆U.S. GOVERNMENT PRINTING OFFICE: 1982-360-930:AMS-1143

COOL IT DOWN

Precooling is the rapid removal of field heat from fresh produce during or after their preparation for market. Unscramble the following groups of letters to discover the major precooling methods used for fresh fruits and vegetables.

1. docyorgnilho ____________________

2. kaicagpinecg ____________________

3. mucivagicun ____________________

4. riadrofec ____________________

5. morocooglin ____________________

COOL IT DOWN

Precooling is the rapid removal of field heat from fresh produce during or after their preparation for market. Unscramble the following groups of letters to discover the major precooling methods used for fresh fruits and vegetables.

1.	docyorgnilho	hydrocooling
2.	kaicagpinecg	package icing
3.	mucivagicun	vacuum cooling
4.	riadrofec	forced air
5.	morocooglin	room cooling

PUTTING IT TOGETHER

Shipping containers are used to facilitate the movement of fresh fruits and vegetables from one location to another and to provide the product with some protection. Fill in the following chart, correlating the package types with the produce.

	WATERMELON	BROCCOLI	BRUSSELS SPROUTS	CABBAGE	CANTALOUPE	CAULIFLOWER	KOHLRABI	POTATO	PUMPKIN	RASPBERRY	STRAWBERRY	SUMMER SQUASH	SWEET CORN	TOMATO
PLASTIC CONTAINERS														
BAGS														
FIBERBOARD BOXES														
WIREBOUND BOXES														
BULK BINS														
LUGS														

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	WATERMELON	BROCCOLI	BRUSSELS SPROUTS	CABBAGE	CANTALOUPE	CAULIFLOWER	KOHLRABI	POTATO	PUMPKIN	RASPBERRY	STRAWBERRY	SUMMER SQUASH	SWEET CORN	TOMATO
PLASTIC CONTAINERS										*	*			*
BAGS				*			*	*					*	
FIBERBOARD BOXES	*	*	*	*	*	*	*	*	*	*	*	*	*	*
WIREBOUND BOXES	*				*	*						*	*	*
BULK BINS	*								*					
LUGS			*							*	*	*		*

DESCRIPTION OF SUPPLEMENTARY SLIDES

Slide 1.	Apples. Tray-pack in 125 count container, five trays of 25 apples each. Apples of uniform size and waxed to maintain moisture and improve eye appeal. Full telescope fiberboard box.
Slide 2.	Broccoli. Packed in waxed, flat-topped fiberboard box. Tabs on the edge of box permits easier stacking. Note cooling requirement stated on box.
Slide 3.	Broccoli. Ice-packed to help preserve freshness. Note ice remaining in container after the broccoli was received by the distributer.
Slide 4.	Broccoli. Finely trimmed, secured in uniformly sized bunches.
Slide 5.	Cabbage. 50 pound bags stored in bulk bin.
Slide 6.	Cabbage. Packaged in 50 pound mesh bags. Tight heads, uniform size, well trimmed.
Slide 7.	Cantaloupe. Uniform boxes, pallet stacked.
Slide 8.	Cantaloupe. 18 count waxed fiberboard box. Note melons are uniform size.
Slide 9.	Carrots. Break of bulk to one pound cello bags.
Slide 10.	Carrots. 25 and 60 pound bulk bags. Note hydrocooled statement.
Slide 11.	Carrots. Bulk bags pallet stacked.
Slide 12.	Containers of cauliflower pallet stacked. Note tabs on boxes stablized stacking.
Slide 13.	Cauliflower. 12 count carton. Heads individually wrapped in perforated film wrap. Heads well trimmed, of uniform size and with white compact curds. Note cooling requirement on container.
Slide 14.	Cucumbers. Waxed to prevent moisture loss. Packed in 1-1/2 bushel containers. Note hydrocooled statement and waxed container.
Slide 15.	Eggplant. Individually wrapped in tissue paper and place-packed in wirebound crate.
Slide 16.	Lettuce. 2 dozen count waxed containers. containers. Note hydro vac statement.
Slide 17.	Lettuce. Two dozen count containers with two layers of 12 heads per layer.
Slide 18.	Onions. Uniform size pack. 50 pound mesh bags. Note clean condition of product.
Slide 19.	Onions. Mesh bags stacked on pallets.

Slide 20. Peppers. Waxed, uniform medium sized. Waxed carton.

Slide 21. Multi-purpose 1-1/9 bushel flat topped fiberboard box. Note container is preprinted for acorn squash, eggplant, cucumbers and peppers. Holes in box sides aid ventilation.

Slide 22. Potatoes. 50 pound container. Full telescope box. Pallet stacked.

Slide 23. Potatoes. Uniform size and color. Clean condition of product.

Slide 24. Red potatoes. 100 pound burlap bags. Note clean condition of product.

Slide 25. Sweet potatoes. Product in clean condition. Full telescope fiberboard box. Note "do not store under 50°F" and "treated with sprout inhibitor."

Slide 26. Radishes. 40 pound cello bag. Uniform size product. Note precooling statement.

Slide 27. Radishes. Pallet stacked.

Slide 28. Strawberries. Uniform color and size with calyx (caps) attached. 12 plastic dry pints per crate.

Slide 29. Strawberries. Fiberboard crates. Note wire handle on crate for secure stacking and cardboard separation covers between crates.

Slide 30. Strawberries. Pallet stacked.

Slide 31. Tomatoes. 25 pound bulk pack. Partial telescope fiberboard box. Note uniform size and color

Slide 32. Tomatoes. 5 x 6's (5 wide and 6 long per layer). Two layers per crate. Note uniform size and color.

Slide 33. Cherry tomatoes. 12 pints per crate. Note precooling statement.
Slide 34. Cherry tomatoes. Pallet stacked. Note interlocking wire handles for secure stacking and easy handling.

Slide 35. Watermelons. Bulk bin.

Slide 36. Zucchini. Waxed 1/2 bushel box.

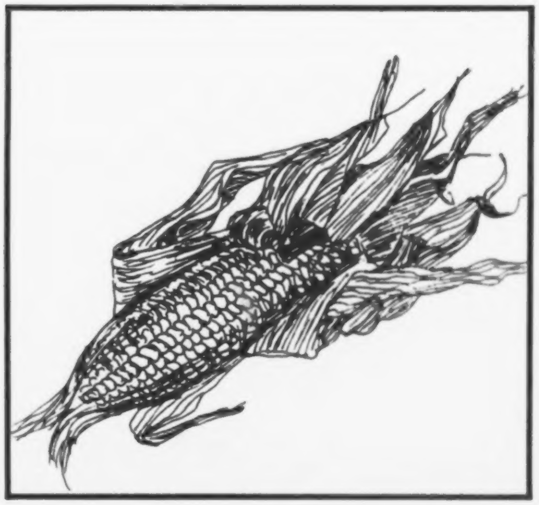
Slide 37. Zucchini. Note maximum accepted size.

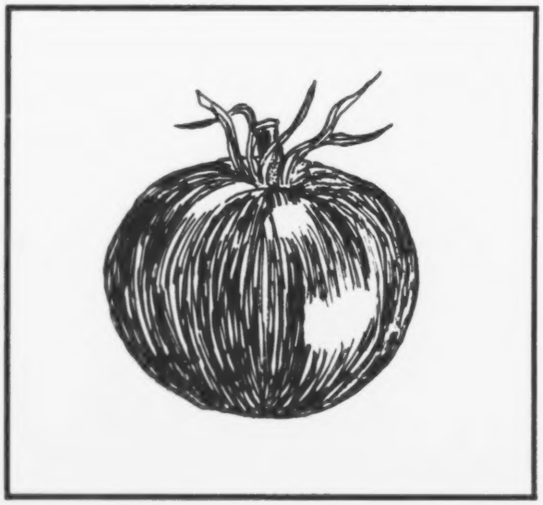
Slide 38. Warehouse. Note three tier storing layout for efficient use of space and ease of rotating stock.

Slide 39. Warehouse.

Slide 40. Warehouse. Forklift moving pallet load.

FARMERS MARKET development manual





FRUIT & VEGETABLES

IOWA DEPARTMENT OF AGRICULTURE
AND LAND STEWARDSHIP

DALE M. COCHRAN
SECRETARY OF AGRICULTURE

1·36

FARMERS MARKET DEVELOPMENT MANUAL

Prepared by

THE IOWA DEPARTMENT OF AGRICULTURE
AND
LAND STEWARDSHIP

Dale M. Cochran
Secretary of Agriculture

Horticulture Section

January 1987

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INTRODUCTION

Iowa's farm economy seems to be closely tied to our ability to sell very large quantities of very few commodities. Those generally regarded as the state's major commodities include beef cattle, hogs, corn and soybeans. Over the past several years, however, it is evident that this state's reliance on such limited crop and livestock endeavors has endangered the health of our economy.

In 1983 a governor's task-force suggested much work faced the state in diversifying the agricultural base and a long-term approach should be implemented. The report stated that emphasis should be placed on value-added processing, new use research, and the initiation of aggressive marketing techniques to help sell current commodities. Furthermore, it was suggested that new crop research be instituted. The report also noted that as one of many solutions, horticultural crop production and marketing should be immediately investigated.

As part of that investigation the Department of Agriculture discovered that much of the state's current demand for fresh vegetables and fruits was being met by out of state suppliers. It was also discovered that one of the nation's most basic systems for selling fresh farm products had been severely underemployed. That system is the farmers market.

The farmers market is only one of various means which must be employed by Iowa growers for selling products if indeed we are to be successful in developing an expanding Iowa produce industry.

A farmers market has several distinct advantages. For the new producer, it represents one of the only outlets available while gaining production expertise and expanding product volume. The market also provides the new grower with the opportunity to discover what consumers demand in product quality, quantity and variety.

One must further consider that wholesale and retail outlets are not setup to accept and care for the small volumes new producers usually generate. Furthermore, products sold at a farmers market do not require the special post harvest handling techniques generally demanded of products sold to wholesalers and retailers.

The purpose of this HOW TO manual is to encourage the development of a system of farmers markets by providing an easy to use reference guide for those who want to start a new market, expand an existing market or participate in the selling of goods. The thirteen sections address specific topics which are vital to establishing and maintaining a vibrant market.

SECTION A: ESTABLISHING AND MAINTAINING A FARMERS MARKET

In order to develop and maintain a viable farmers market, an organized and well thoughtout process needs to be implemented. The following is an example of such a process and is meant to serve as a guide for persons interested in farmers market development.

1. ORGANIZE A STEERING COMMITTEE.

   A. Seek out those people in the local area who share enthusiasm in establishing a farmers market and who are willing to make a commitment.

   B. Obtain from every contact the names, addresses and phone numbers of others who might be actively interested in starting and developing a farmers market.

   C. Responsibilities of Steering Committee.
      1) To set long-term goals...important for year-to-year continuity...provide guidance and direction.

      2) To establish short-term goals or objectives.

         a) Should be measurable and obtainable within one season.

         b) Provides a sense of accomplishment upon achievement of each objective.

         c) Example:
            -To obtain fifteen to twenty vendors present during each day of the market season.

      3. To initiate all functions and activities necessary for developing, operating, and promoting the farmers market.

      4. To maintain good communications with everyone involved in or impacted by the market.
         a. To encourage support and participation in the market.

         b. To smooth troubled waters regarding the market.

            1) Worries of local groceries.
            2) Mediating disputes regarding who should control market.

      5. To adjust strategies given changes during the development and operation of the market...based on continual evaluation.

2. CONDUCTING MEETINGS.
   A. Meetings should be publicized according to the range and scope of participation desired.

      1. Organizational meetings are generally better suited to small gatherings.

      2. Interest meetings, where overall community input is sought, is well suited to large groups and should be located in an easily accessible and well-known location. Such meeting should be publicized.

3. FIRST MEETING.
   A. Outline how grower interest will be determined (see Section C)
      1. Develop questions for producers' response.
      2. Determine method for surveying.
   B. Outline how consumer interest will be determined (see Section C)
      1. Develop questions for consumers' response.
      2. Determine method for surveying.
   C. A member of the steering committee should serve as survey coordinator and recruiter of volunteers for conducting the surveys.

4. SECOND MEETING.
   A. Evaluate the findings of the grower and consumer surveys.
      1. Determine whether or not to continue the effort of developing a farmers market based on level of interest indicated.
      2. Determine the size of the proposed market.
         a. The number of stalls needed to accommodate the expected vendors.
         b. The number of extra stalls deemed necessary to accommodate unexpected vendors and anticipated growth.
   B. Establish the following sub-committees, set tasks, and outline time frames.
      1. Site Selection Sub-Committee (see Section D).
         a. Develop criteria for site selection.
         b. Investigate and evaluate possible locations.
         c. To prepare site recommendations for the Steering Committee.
      2. Grower Relations Sub-Committee (see Section K).
         a. To maintain open communication between local growers and the Market Steering Committee.
            1) Determine the anticipated selection of products to be offered by vendors.
            2) Determine when growers anticipate having product available.
            3) Work with growers to insure that a variety of product will be offered at the market throughout the season.
            4) Keep the growers informed of the Market Steering Committee's activities.
         b. To obtain commitments to participate from growers.

5. THIRD MEETING.
   A. Evaluate the findings of the Site Selection Sub-Committee and make a preliminary selection.

   B. Develop a written proposal for the owner of the site.

      1. Outline the advantages to them and the community.

      2. How the property will be used.

   C. Determine the desired physical improvements necessary prior to market opening.

   D. Establish the State and Local Regulations Sub-committee, set tasks, and outline time frames (see Section H).

      1. Determine the regulations with which the market will have to comply, regardless of location.

         a) Food guidelines
         b) Food establishment license
         c) Building codes

      2. Determine the regulations with which the market will have to comply, given the location of the selected site.

         a) Zoning ordinance requirements
         b) Sign ordinance requirements

6. FOURTH MEETING.
   A. Evaluate the findings of the State and Local Regulations Sub-Committee.

   B. Make final determination of site to be used and initiate actions for securing site.

   C. Develop and prepare a Market Biography to be used to provide information on the proposed intentions and expectations of the market. (see Section B)

      1) Length and dates of market season.
      2) Number of vendors expected.
      3) Proposed activities and promotions.
      4) Benefits the farmers market brings to individuals and the community.
      5) The farmers market contact person's name and phone number.

   D. Establish the following sub-committees, set tasks, and outline time frames.

      1. Site Development Sub-Committee (see Section E).

         a. To determine site layout of the market...considering desired amenities and required regulations.

         b. To determine the specific physical improvements to be undertaken.

2. Market Rules Sub-Committee (see Section G).

   a. To develop rule recommendations for market operation.
   b. To evaluate the anticipated impact of each proposed rule.

7. FIFTH MEETING.

A. Evaluate the recommendations of the Site Development Sub-Committee and outline activities to be undertaken.

B. Discuss the recommended market rules, make necessary amendments, and adopt rules.

C. Outline a listing of potential sponsors for the market.

   1. Those who are willing to finance or donate in-kind services (use of phones, office space, supplies, license fees, etc.).

   2. Sponsors are important to help cover initial costs until a sufficient level of self-generated income is achieved from stall fees.

D. Develop a listing of reasons why each potential sponsor should want to help develop the farmers market. Examples are:

   1. Chamber of Commerce—to attract people into the business district.

   2. Local government—due to the economic and social benefits for the local community.

   3. Growers association—to obtain impact on market development decisions, and for establishing an additional market outlet for them to use.

E. Establish the following sub-committees, set tasks and outline time frames.

   1. Funding and Budgeting Sub-Committee (see Section F).

      a. Determine the costs of the required physical improvements.

      b. Secure sponsors for the market.

      c. Obtain donations (utilize the Market Bibliography when making contacts).

         1. Cash
         2. Supplies
         3. Materials
         4. Volunteer labor

      d. To determine an overall budget and outline proposed stall fees for the upcoming season.

2. Market Manager Sub-Committee (see Section I).

   a. Outline the manager's qualifications
   b. Outline the manager's responsibilities
   c. Develop a list of possible candidates

F. Determine specific market season (based on anticipated supply and selection of product).

1. Opening day.

2. Days of the week that the market will operate—taking into consideration the days neighboring markets operate. Growers may be participating and would not want the change.

3. Last market day.

8. SIXTH MEETING.

A. Make a market manager selection and outline requirements of the individual.

B. Outline a schedule for undertaking physical development activities, and have the Site Development Sub-Committee and/or Market Manager oversee development.

C. Establish a Promotions and Advertising Sub-Committee, set tasks and outline time frames. (see Section J)

1. Develop a strategy for obtaining media coverage throughout the market season.

2. Develop opening day activities.

3. Develop promotional activities throughout the market season for maintaining customer traffic.

9. SEVENTH MEETING.

A. Review the recommendations of the Promotions and Advertising Sub-Committee. Designate persons responsible for each element of the proposed plan.

B. Develop reporting system for Market Manager to keep Steering Committee informed.

C. Have the Grower Relations Sub-Committee report on the status of the grower group.

10. FINALIZE SITE DEVELOPMENT ACTIVITIES.

11. FINALIZE OPENING DAY ACTIVITIES.

12. OPENING DAY.

13. GRAND OPENING DAY.

A. This should be one of the biggest promotional event days during the market season.

B. The celebrated grand opening should occur when there is sufficient product volume and variety for enticing consumers to shop at the market throughout the season. This date is not always the same as the first selling day of the market season.

C. Everyone who has been instrumental in the development of the market, plus local officials, celebrities, and media should be invited and encouraged to actively participate in the days activities.

14. TRACKING THE SEASON.

A. Number of vendors and their frequency of participation.

B. Estimated number of consumers.

C. Diary of activities, what sells best, and weather conditions.

C. Impact of promotional activities on customer traffic.

D. Problems.

15. YEAR-END MEETING.

A. A social gathering for all participants.

B. To evaluate the season.

16. INTERIM SEASON ACTIVITIES.

A. Steering Committee Meetings

1. To realign goals and strategies.
2. To set agenda for next season.

B. Grower Seminars (See Section K)

C. Newsletters

SECTION B. RESOURCES

Resources are groups or individuals that offer expertise, services or supplies, and who are not obligated or required to assist. The following will cover the market biography and provide resource guides to use in the development of market resources.

1. Many groups or individuals can be used as resources in one way or another. Many people are more than willing to donate their time and services to a worthy cause. A listing on the following page gives examples of potential resource groups or individuals.

2. Market biography. A market biography is an information sheet that can be given to potential Resources to acquaint them with the farmers market and its activities.

   A. Prepare market biography prior to contacting potential resource person.

   B. The market biography should contain a summary of market intentions and expectations, including the following:

      1) Length and dates of the market season.

      2) Number of vendors expected.

      3) Proposed activities and promotions.

      4) Benefits the farmers market brings to the community.

      5) Benefits the farmers market brings to the Resource.

      6) Needs of the market.

      7) Farmers market contact person's name and phone number.

   C. Leave the market biography with the Resource to use for future reference.

	SERVICES PROVIDED															
RESOURCES	Newsletters	Advertising/publicity	Distribution of survey	Fundraising	Mailings	Organizing	Promotions	Sponsorship	Supplies	Lumber	Paper	Support Services	Restroom facilities	Water	Use of telephone	Use of office space
Banks Contact Name:																
Businesses and Merchants Contact:																
Chamber of Commerce Contact:																
City Council Contact:																
Community Development Commission Contact:																
County Board of Supervisors Contact:																
County Development Commission Contact:																
County Farm Bureau Contact:																
County Extension Office Contact:																
Department of Parks and Recreation Contact:																
Equipment Dealers Contact:																
Fair Boards Contact:																
Feed and Seed Stores i.e.,. Earl May Garden Center Contact:																
FFA, 4-H Clubs Contact:																

	Newsletters	Advertising/publicity	Distribution of survey	Fundraising	Mailings	Organizing	Promotions	Sponsorship	Supplies	Lumber	Paper	Support Services	Restroom facilities	Water	Use of telephone	Use of office space
Foundations Contact:																
Garden Clubs, Men's and Women's Contact:																
Local Producer Groups Contact:																
Legislators Contact:																
Media Newspapers Contact:																
Radio Contact:																
Television Contact:																
Private Citizens Contact:																
Religious Groups Contact:																
Rural Electric Cooperatives Contact:																
Senior Citizen Groups Contact:																
Service Organizations American Legion Contact:																
Elks Contact:																

	Newsletters	Advertising/publicity	Distribution of survey	Fundraising	Mailings	Organizing	Promotions	Sponsorship	Supplies	Lumber	Paper	Support Services	Restroom facilities	Water	Use of telephone	Use of office space
Kiwanis Contact:																
Lions Club Contact:																
Masons Contact:																
Rotary Contact:																
VFW Contact:																
State Department of Agriculture Contact:																
University Agricultural Department Contact:																
Other Contact:																
Other Contact:																

SECTION C: INTEREST SURVEYS

The survey is an instrument or tool that can help in determining the level of interest of a designated group. It is advisable to test the degree of interest shown by producers and the targeted consumer prior to the development of a farmers market. The survey can determine whether the interest stimulated is enough to indicate the development and success of a farmers market.

1. METHODS OF SURVEY.
   - A. Mail.
   - B. Phone.
   - C. In-person.

     1) Door-to-door
     2) Person on the street

   - D. Public meetings.

     1) Attendance to meetings on a specific topic.
     2) Input from those attending the meeting.

2. SURVEY CONTENT.
   - A. Questions pertaining to specific information desired.

   - B. A contact person, address and phone number.

   - C. Mailed surveys should have a deadline for responding.

3. THE CONSUMER SURVEY. (See examples, pp. 14-18)
   - A. Directed to potential consumers

   - B. Investigate items consumers look for at a farmers market. Any area of interest can be surveyed, from types of products the consumer would like to see sold at the market, to reasons why the consumer shops at the farmers market.

   - C. Surveys help attract attention to the market and build consumer awareness concerning the market.

   - D. Surveys help obtain data to be utilized in planning the market.

   - E. Include a description of the farmers market with the survey.

     1. Location of proposed market.
     2. Benefits the market will provide for the consumer.
     3. Benefits the market will provide for the community.

4. THE GROWER SURVEY. (See example, pp. 19-20)
   - A. Determines degree of participation interest.

   - B. The grower survey should include questions concerning the following:
     1. Types of product the grower produces.

     2. Days of interest that a grower would participate at the farmers market.

3. The number of weeks the grower would participate.

   a. Length of season.
   b. Specific calendar days the grower would participate.

4. Request for any additional names of growers who may be interested in becoming involved in the farmers market.

5. SCOPE OF THE SURVEY
   A) Sampling population.

   B) Total population.

CONSUMER SURVEY

(In-person or phone survey)

1. Have you ever attended a farmers market?

2. Did you enjoy your experience at the farmers market?

3. What did you like most about the farmers market?

4. What did you not like about the farmers market?

5. How often do you (would you) shop at the farmers market?
    - Weekly
    - Twice a month
    - Once a month
    - Once a season

6. How much money do you (estimate spending) spend per visit to the market?
    - Under $5.00
    - $5.00 to $10.00
    - $10 to $20.00
    - Over $20.00

7. What specific products do you (would you) like to see at the farmers market?

8. How far do you live from the market?

In the same community

Within 5 miles

Within 10 miles

Within 20 miles

Farther than 20 miles

9. Would you like to see a farmers market in your community?

10. Any additional comments.

CONSUMER SURVEY

(Mailed survey)

1. Have you ever attended a farmers market?

___ Yes
___ No

2. What did you like about the farmers market?

___ Fresh quality produce
___ Supporting the local economy
___ Locally grown produce
___ Variety and selection of product
___ Atmosphere and activities of the market
___ Other (please specify) ______________________________

3. What did you not like about the farmers market?

___ Location
___ Price
___ Selection of product
___ Day market is open
___ Time market is open
___ Other (Please specify) ______________________________

4. How often do you (would you) shop at the farmers market?

___ Weekly

___ Twice per month

___ Once per month

___ One to two times per season

5. What products would you like to see sold at a farmers market?

___ Fruits (Specify) ______________________________

___ Vegetables (Specify) ___________________________

___ Dry flowers

___ Fresh flowers

___ Firewood

___ Baked goods

___ Honey

___ Apple cider

___ Other (Please specify) _________________________

6. How much do you estimate spending per visit to a farmers market?

___ Less than $5.00

___ $5.00 to $10.00

___ $10.00 to $20.00

___ Over $20.00

7. How far do you live from the proposed farmers market location?

___ Within the community
___ Within 5 miles
___ Within 10 miles
___ Within 20 miles
___ Farther than 20 miles

8. Would you like to see the proposed farmers market established and developed?

___ Yes
___ No

9. Would you like to be involved in the planning and development of the market?

___ Yes
___ No

10. Additional comments: ____

____

____

For additional farmers market information contact:

(Name)
(Address)
(Phone Number)

Send completed form to:

(Name)
(Address)

GROWER SURVEY

Name: ______________________________

Address: ______________________________

Phone Number: ______________________________

1. Would you be interested in selling your products at a local farmers market?
   ___ Yes
   ___ No

2. Number of acres currently in fruit and vegetable production?

3. Types of products produced:

Product	Number of Acres
______	_____
______	_____
______	_____
______	_____
______	_____

4. How many days per week would you sell at a farmers market?
   ___ One day per week
   ___ Two days per week
   ___ Three days per week

5. Specify which days of the week you would participate at the farmers market:
   ___ Monday
   ___ Tuesday
   ___ Wednesday
   ___ Thursday
   ___ Friday
   ___ Saturday
   ___ Sunday

6. Product availability dates:
   _____ Earliest date product will be available
   _____ Latest date product will be available

7. Would you be interested in becoming involved in a local growers group to produce product for a farmers market?
   ___ Yes
   ___ No

8. Would you like to be involved in the organization of the growers group?
   ___ Yes
   ___ No

9. Would you be interested in helping establish and develop a local farmers market?
   ___ Yes
   ___ No

10. Do you know of any other grower who may be interested in participating in a local farmers market? Please fill in name's) below:

Name:________________________________

Address:________________________________

Phone Number:________________________________

Name:________________________________

Address:________________________________

Phone Number:________________________________

Please send completed form to:

Name:

Address:

For additional information contact:

(Name)

(Address)

(Phone Number)

SECTION D: SITE SELECTION

There are various factors to consider when determining the location for a farmers market. Cost involved with the use (rent) and the development or upgrading the site will greatly influence site selection. While all of the following elements should be considered, the final determining factor will depend on the specific criteria established by each individual market.

1. PERMANENT VERSES TEMPORARY USE OF A SITE.

A. A farmers market site can be permanent through a long term leasing agreement with the owner, or a farmers market may purchase a site.

1) Advantages of a permanent site.

a. After consumers become familiar with the location and learn to look in the same place for the market.

b. The farmers market will directly receive the benefits from all investments made in the site development.

c. Permanent structures or shelters can be utilized. Fences may be built around the market permitting vendors to leave their stalls set up. Displays, containers or products such as firewood can be left in place from week to week.

d. Set up and break down time for vendors will be decreased.

2) Disadvantages of a permanent site.

a. A large initial investment may be required.
b. Vandalism may occur.
c. Liability insurance will be even more important.

C. Farmers markets may be able to secure a long-term lease at very low costs if the market steering committee agrees to make specific developments and improvements, or allows others to use the site when the market is not in operation.

B. Temporary site - short-term lease

1) Empty lots in prime locations within the business district of a city or town are often available to farmers markets. Through negotiations with the land owner these sites can often be used at little or no cost. The farmers market may be permitted to use the property in return for maintaining upkeep of the site, however, there may not be a time commitment for utilization of such sites.

2) A temporary location may be free to use and the market may even be permitted to make improvements, but unless a long term commitment is established these benefits will not be worth major investments by the market.

3) Temporary sites require little initial investments by the farmers market.

D. Temporary site - free access - no time commitment.

1) There is no limit to the site possibilities that farmers markets may utilize at no cost. Potential sites include:

   a. Athletic fields
   b. Bank parking lots
   c. Blocked off city streets
   d. Church or synagogue parking lots
   e. Churchyards
   f. City parking lots
   g. City parks
   h. County fair grounds
   i. Courthouse grounds
   j. Outdoor malls
   k. Schoolyards
   l. School parking lots
   m. Shopping center parking lots
   n. Town squares
   o Vacant lots

2) Improvements and site development is limited. A farmers market may have free access to a site, but it may not be permitted to make any improvements. Improvements may be made by negotiating and working jointly with site owner.

3) There is no guarantee to the length of time a farmers market may utilize a site if there is no leasing agreement.

4) Many free locations are often used for other purposes in addition to the farmers market. Utilization of the site may need to be coordinated with other groups or activities.

2. ACCESSIBILITY

A. The farmers market should be easily accessible to the public transit systems.

B. The market should be easily accessible from the major roadways or thoroughfares.

C. The farmers market site should have entrance and exit points.

D. The farmers market should be located on a through street to avoid congestion and permit a flow through of traffic.

3. LOCATION.

A. The farmers market should be developed in a central location in the city or town

1) Near potential consumer groups.
   a. Where they live.
   b. Where they work.
   c. Where they shop.

2) Near popular areas that receive regular consumer traffic.

3) In a location that appeals to a cross-section of consumers.

B. The market site should be easily visible from the main thoroughfare.

C. Consumers should be able to easily locate the market from a few simple directions.

D. Neighboring land uses should not distract from the aesthetic appeal of the site. (i.e., A garbage dump would not create a favorable neighboring environment)

4. SURFACE OF THE SITE.
A. A level, even surface.

B. A site with a moderate slope may be utilized if the development of the farmers market is not hindered.

5. SHELTER FROM THE SUN AND RAIN.
A. Protects the products, aiding in maintaining freshness and quality.

B. Creates a more comfortable and enjoyable shopping experience for the consumer.

C. Shelter can be provided by:
1) Trees
2) Overpasses or bridges
3) Permanent buildings, structures or shelters

6. SIZE OF THE SITE.
Ample space should be provided for:

A. The farmers market selling area.
B. Walkways for the consumer.
C. Parking areas either on-site or within a conventient location to the market

7. SPECIAL PLANNING CONSIDERATIONS.
May be necessary if the site is used in conjunction with other activities.

8. OTHER FACTORS.
A. Location of water supply on-site or accessible to the site.

B. Location of restroom facilities on-site or accessible to the site.

C. Zoning or building regulations may restrict or dictate proposed development plans.

SECTION E: SITE DEVELOPMENT

1. After a farmers market site is selected, outline problems, changes/improvements that are needed in the market development.

2. Develop several proposed market plan options.

3. Estimate costs for each of the proposed options.

4. Select best option and sketch a layout of the proposed market plan. Sketch should be drawn to scale. The overall layout should be attractive and uncongested. (See diagrams of layout options). Include the following in the market sketch:

   A. Existing structures on the market site.

      1) Buildings or permanent structures.
      2) Plant materials and trees.
      3) Sidewalks.

   B. Proposed permanent structures in the development plan.

      1) Buildings or shelters.

         a. Pole buildings
         b. Overhead shelters
         c. Lath structures
      2) Plant materials and trees.

      3) Sidewalks.

   C. Temporary structures to be included in the market to provide shade and protection from the rain.

      1) Awnings
      2) Umbrellas
      3) Large canopies or tents
      4) Carts or tables with umbrellas
      5) Carts or tables with roofs
      6) Pickup trucks with toppers
      7) Canopies mounted on pickup trucks

   D. Designate entrances and exits.

   E. Stall locations and sizes.

      1) Determine the number of stalls based on interest survey.

         a. 10' x 20' stall size for each vendor.
         b. Large pickup trucks may require two spaces.

      2) 20' to 30' walkway or pedestrian lane.

      3) Allow space for unexpected vendors.
      4) Allow room for future growth.

    5) Designate area for storage.

- F. Parking area for customers.
    - 1) Allow 25-50 customer parking spaces.
    - 2) Include handicap parking spaces.
- G. Indicate existing streets and right-of-ways.
- H. Specify surface type or groundcover (i.e.,. turf, gravel, concrete) Surface area should be:
    - 1) Level or with moderate slope and grade
    - 2) Dust/mud free
    - 3) Free of potholes
- I. Include fire hydrants in sketch. Permit free access to hydrants in market development plan.
- J. Designate water sources.
- K. Designate restroom facilities.

5. Consider handicap access when planning and developing the market.

6. Building permits may be required. Check local laws and regulations. (See Section H).

7. Signage used for farmers markets must be consistent with local rules and regulations. (See Section H)

SECTION F: FUNDING AND BUDGETING

Project a budget early in the planning stages of a farmers market.

A. COSTS

Following are some of the costs that might be incurred by a farmers market. However, not all of these will necessarily be incurred.

1. Rental or lease of site.

2. Licenses and permits.

3. Site Improvements, examples include...
    a. Resurfacing
    b. Storage Facility
    c. Overhead Structure

4. Organizing expenses
    a. meeting facilities
    b. telephone
    c. printing
    d. postage
    e. travel

5. Advertising
    a. art work
    b. printing
    c. distribution (travel time & expense)
    d. materials

6. Market Manager's salary
   It is recommended that a person be hired, with the sole responsibility of farmers market operations.

7. Liability Insurance
   Personal accidents or injury may be the liability of the market. A necessity with the number of people who will be visiting the farmers market over the course of the season. If covered by other (mall, city, etc.) then the insurance may not be necessary. Always check to be sure.

8. Miscellaneous. equipment and supplies
    a. fire extinguisher
    b. first aid kit

B. INCOME

The market should be planned to support itself. The following are possible sources of income.

1. Stall Fees.
    a. Stall fees should be assessed of every vendor selling in the market.

    b. Generally both daily and season rates are offered.
        1) Seasonal rates should reflect a discount from daily rates if

they were paid for every market day of the season.

2) Total payment of seasonal rates should be required at the beginning of the market season.
    aa) Prepayment of stall fees will provide the market added operating capital to help cover the higher costs necessary at the beginning of the season.

    bb) A savings incentive in overall costs should exist for vendors.

c. Stall Fee Rate Categories.

    1) Daily Rates for "local grown" and "Iowa grown" products. (See section G for definations)

    2) Daily Rates for brokers of products imported.

    3) Seasonal Rates for "local grown" and "Iowa grown" products.

d. The number of stalls available under each rate category should be determined during the preparation of the budget and numbers should be based on the findings of the grower interest survey

2. Donations
    a. Labor
        1) Developing and making site improvements.
        2) Distributing advertising flyers.
        3) Making phone calls.
        4) Soliciting additional donations and support.
        5) Preparing advertising.
        6) Participating in promotional activities.

    b. Materials/Supplies/Misc.
        1) Building materials and equipment
        2) Office supplies
        3) Printing and postage
        4) Office space
        5) Telephone
        6) Prizes for promotional activities

    c. Farmers Market Site

    d. Cash donations

SECTION G: MARKET RULES

Rules need to be specific and clear-cut, thereby minimizing disputes.

A. HOURS AND DAYS OF OPERATION.

1. The following days should be outlined in the rules.
    - a. The date of the first day that the market will be open for the season.
    - b. The days of the week that the market will be operating.
    - c. The date of the last day that the market will operate for the season.

2. The following references to time should be outlined in the rules.
    - a. A specific time of day when vendors may begin setting up.
    - b. A specific time of day for the deadline of stall fee payment.
    - c. A specific time of day when vendors with seasonal stall permits must have occupied their space, in order to avoid loosing its use for the specific day to another vendor.
    - d. A specific time of day when vendors may no longer gain admission to the market for setting up and selling.
    - e. A specific time of day when vendors may begin selling.
    - f. A specific time of day when vendors may begin leaving the market site.
    - g. A specific time of day when vendors shall have totally vacated the farmers market premises.

B. WHO CAN AND CANNOT SELL AT THE MARKET.

1. All markets should allow all vendors to sell "Iowa Grown" products and to be labeled as such.

2. Farmers markets that are located near the state boundaries should allow all vendors with "Local Grown" products and allow them to be labeled as such. The intent is to provide outlets for selling and buying locally produced fresh products.

    Example: A product grown in Lineville, Iowa should be just as fresh as a product grown in Lineville, Missouri.

    Quantity and variety is an asset for attracting customers to any farmers market, therefore discrimination against vendors from neighboring states/governmental subdivisions is discouraged. Discrimination can result in reciprocal actions against the market's vendors by other nearby farmers markets where they may want to sell.

3. Vendor Categories.
    - a. "Iowa Grown"
        - 1) Vendor has grown the product in Iowa with the intent of generating income.

    2) Vendor has obtained product from Iowa growers.

    3) Vendor has grown product in Iowa as a hobby.

  b. "Local Grown"
    1) Vendor has grown the product outside the state of Iowa, but within the vicinity of the market.

    2) Vendor has obtained the product from local growers outside the state of Iowa.

    3) Vendor has grown product as a hobby outside the state of Iowa, but in the vicinity of the market.

  c. "Broker"
    Vendor has imported the product from outside the state of Iowa, and outside the areas of neighboring states which are within a short traveling distance to the market.

C. MARKET FEES
1. Outline to whom fees are to be paid.
2. Outline the fee schedule.

  a. Daily rates
  b. Seasonal rates
    Should result in a greatly reduced cost as compared with paying fees on a per day basis.

D. STALL ASSIGNMENTS
Outline how assignments will be made based on the following:

  a. Location by vendor category.
  b. Location by seasonal verses daily rates.
  c. Location on a first come basis.
  d. Whether or not stalls may be sub-let.

E. PRODUCT
1. Outline what products can and cannot be sold...considering state and federal regulations and guidelines.

2. Products quality that is acceptable.

3. Under what conditions it can be required that the product be removed from sale or confiscated.

F. REQUIRED VENDOR PERFORMANCE
1. Appearance
2. Behavior
3. Maintaining a tidy area throughout the market day.
4. Leaving clean stall at the end of the market day.

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G. PENALTIES FOR NONCOMPLIANCE WITH MARKET RULES

These should be clearly outlined prior to the market season and distributed to every vendor.

1. Under what conditions a vendor would permanently loose the privilege to sell
2. Under what conditions a vendor would temporarily loose the privilege to sell
3. When if ever a vendor would be assessed a fine.

H. MARKET MANAGER AS FINAL JUDGE

1. In order to maintain a smooth running farmers market the market manager needs to be given the authority to interpret, when necessary, and enforce the market rules.

2. If the market manager does not consistently reflect the intent of the rules or the steering committee, two options exist:

   a. Further clarification and official adoption of revised rules.
   b. Replace the market manager.

9. MISCELLANEOUS

No firearms.
No alcoholic beverages.
No pets, with the exception of seeing eye dogs.
Specifying unloading areas when market is not set up to accommodate vehicles.

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SECTION H: STATE AND LOCAL REGULATIONS

A. ZONING ORDINANCE

Most Iowa cities and counties have zoning ordinances in effect. The local governing body is determined by the specific location of the farmers market.

Zoning ordinances outline such things as:

1) The permitted land uses within each zoning district.
2) The minimum setback requirements for site improvements from property lines.
3) The minimum dimensions for sidewalks, drives, and parking.
4) The maximum height of structures and fences.
5) The minimum amount of visual screening (trees, shrubs, fencing) required for certain uses.
6) The minimum amount of parking spaces required.

B. BUILDING CODES

The State, in addition to most local governments, has in force a building code. The purpose of such is to insure that the public health, safety and welfare is protected through proper construction of any structure, whether portable or fixed, that affords facilities or shelter for persons, animals or property.

The local governing body is responsible for:

1) Approval or disapproval of plans and specifications.
2) The issuance and revocation of building permits, licenses, certificates, and similar documents.
3) The inspection of buildings or structures,
4) The administration and enforcement of building regulations.

C. FOOD ESTABLISHMENT LICENSE

One license is all that is necessary for a farmers market. Each vendor does not need to carry a license. Application for a Food Establishment License should be made to:

Iowa Department of Inspections and Appeals
Investigations Division
Lucas State Office Building
Des Moines, IA 50319

D. SIGN PERMITS

Regulation of advertising signs along primary highways is under the jurisdiction of the Iowa Department of Transportation. For more information contact:

Office of Right of Way
Highway Division
Iowa Department of Transportation
800 Lincoln Way
Ames, IA 50010
(515)239-1296

City or county zoning or sign ordinances may govern the site where signs may be desired for advertising a farmers market. Check at the local court house or city hall for existing regulations that apply.

E. RETAIL SALES TAX

Currently there is a four percent retail sales tax imposed on gross receipts.

Subsection 422.53(6) (Iowa Code) Permits - applications for.

"Persons who are not regularly engaged in selling at retail and do not have a permanent place of business, but who are temporarily engaged in selling from trucks, portable roadside stands, concessionaires at state, county, district or local fairs, carnivals and the like, shall report and remit the tax on a nonpermit basis, under rules the director shall provide for the efficient collection of sales tax."

For more information contact:
Iowa Department of Revenue and Finance
Hoover Building
Des Moines, IA 50319
(515)281-3204

Subsection 422.45(12) (Iowa Code) Exemptions.

"Gross receipts from the sale of all foods for human consumption which are eligible for purchase with food coupons issued by the United States department of agriculture pursuant to regulations in effect on July 1, 1974, regardless of whether the retailer from which the foods are purchased is participating in the food stamp program. However, as used in this subsection, "foods" does not include meals prepared for immediate consumption on or off the premises of the retailer..."

F. U.S.D.A. GRADES

If U.S.D.A. grades are used by vendors, products must meet the minimum standards established for the labeled grades. To obtain copies of crop-specific grading standards contact:
Standardization Section
Fresh Products Branch
Fruits and Vegetable Division
United States Department of Agriculture
(202)447-5870

G. LABELING

Section 196.10 (Iowa Code) Labeling.

..."Each carton containing eggs for retail sale in Iowa which have been candled and graded shall be marked with the grade and size of the eggs contained, the date they were packed, and the name and address of the distributor or packer."

"All eggs offered for sale by an egg handler to a retailer, an establishment or a consumer, shall be candled and graded". (Section 196.7, Iowa Code)

Section 189.9 (Iowa Code) Labeling.

"All articles in package or wrapped form which are required by this title to be labeled, unless otherwise provided, shall be conspicuously marked in the English language in legible letters of not less than eight-point heavy gothic caps on the principal label with the following items:

1. The true name...of the article.
2 The quantity of the contents in terms of weight, measure, or numerical count...
3. The name and place of business of the manufacturer, packer, importer, dispenser, distributor, or dealer.

The above items shall be printed in such a way that there shall be a distinct contrast between the color of the letters and the background upon which printed.

Section 189.11 (Iowa Code) Labeling of mixtures – federal requirements.

"In addition to the requirements of section 189.9, unless otherwise provided, articles which are mixtures, compounds, combinations, blends, or imitations shall be marked as such and immediately followed, without any intervening matter and in the same size and style of type, by the names of all the ingredients contained therein, beginning with the one present in the largest proportion.

Notwithstanding any other requirements of this chapter or of chapter 190, foods and food products labeled in conformance with the labeling requirements of the government of the United States shall be deemed to be labeled in conformance with the laws of the state of Iowa."

H. NURSERY STOCK CERTIFICATE

A certificate of inspection is required on all herbaceous perennials and woody plants that are offered for sale, given away, carried, shipped or deliver for carriage or shipment, within the state. Certificates are issued to nursery stock growers and dealers on an annual basis. Inspection and certification fees for nursery stock growers is fifteen dollars plus one dollar per acre or part thereof, according to the amount of stock inspected. The inspection and certification fee for nursery stock dealers is fifteen dollars. All fees are to be paid at the time of inspection or before a certificate is issued. (Section 177A.9, Iowa Code)

For more information contact:
State Entomologist
Iowa Department of Agriculture and Land Stewardship
Wallace Building
Des Moines, Iowa 50319

I. WEIGHTS AND MEASURES

Section 210.10 (Iowa Code) Bushel measure

"When any of the commodities enumerated in this section shall be sold by the bushel or fractional part thereof, except when sold in a United States standard container or as provided in sections 210.11 and 210.12, the measure shall be determined by avoirdupois weight* and shall be computed as follows:" (Note: the following does not include the entire list found in the Code and contains only those commodities that are felt to be possible commodities sold at a farmers market.)

COMMODITIES	
Apples	48 pounds
Apples, dried	24 pounds
Barley	48 pounds
Beans, green, unshelled	56 pounds
Beans, dried	60 pounds
Beans, lima	56 pounds
Beets	56 pounds
Bran	20 pounds
Buckwheat	48 pounds
Carrots	50 pounds
Cherries	40 pounds
Corn on the cob (field)	70 pounds
Corn in the ear, unhusked (field)	75 pounds
Corn shelled (field)	56 pounds
Corn meal	48 pounds
Cucumbers	48 pounds
Flaxseed	56 pounds
Hickory nuts, hulled	50 pounds
Millet seed	50 pounds
Oats	32 pounds
Onions	52 pounds
Onion top sets	28 pounds
Onion bottom sets	32 pounds
Parsnips	45 pounds
Peaches	48 pounds
Peaches, dried	33 pounds
Pears	45 pounds
Peas, green, unshelled	50 pounds
Peas, dried	60 pounds
Plums	48 pounds
Popcorn on the cob	70 pounds
Popcorn, shelled	56 pounds
Potatoes	60 pounds
Quinces	48 pounds
Rutabagas	60 pounds
Rye	56 pounds
Soybeans	60 pounds
Sweet corn	50 pounds
Sweet potatoes	50 pounds
Tomatoes	50 pounds
Turnips	55 pounds
Walnuts, hulled	50 pounds
Wheat	60 pounds
All root crops not specified above	50 pounds

*The series of units of weight based on the pound of 16 ounces and the ounce of 16 drams

Section 210.11 (Iowa Code) Sale of fruits and vegetables by dry measure.

"Blackberries, blueberries, cranberries, currants, gooseberries, raspberries, cherries, strawberries, and similar berries, also onion sets in quantities of one peck or less, may be sold by the quart, pint, or half-pint, dry measure."

Section 210.12 (Iowa Code) Sale of fruits and vegetables in baskets.

"Grapes, other fruits, and vegetables may be sold in climax baskets; but when said commodities are sold in such manner and the containers are labeled with the net weight of the contents in accordance with the provisions of section 189.9, all the provisions of the chapter (Chp. 191,Iowa Code) relative to labeling foods shall be deemed to have been complied with."

Section 210.13 (Iowa Code) Berry boxes and climax baskets.

"Berry boxes sold, used, or offered or exposed for sale shall have an interior capacity of one quart, pint, or half-pint dry measure. Climax baskets sold, used or offered or exposed for sale shall be of the standard size fixed below:

1. Two-quart basket: Length of bottom piece, nine and one-half inches; width of bottom piece, three and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, three and seven-eighths inches, outside measurement; top of basket, length eleven inches, and width five inches, outside measurement; basket to have a cover five by eleven inches, when a cover is used.
2. Four-quart basket: Length of bottom piece, twelve inches; width of bottom piece, four and one-half inches; thickness of bottom piece, three-eighths of an inch; height of basket, four and eleven-sixteenths inches, outside measurement; top of basket, length fourteen inches, width six and one-fourth inches, outside measurement; basket to have cover six and one-fourth inches by fourteen inches, when cover is used.
3. Twelve-quart basket: Length of bottom piece, sixteen inches; width of bottom piece, six and one-half inches; thickness of bottom piece, seven-sixteenths of an inch, outside measurement; top of basket, length nineteen inches, height of basket, seven and one-sixteenth inches, width nine inches, outside measurement; basket to have cover nine inches by nineteen inches, when cover is used.

SECTION I: MARKET MANAGER

The market manager is responsible for the day to day operation of the farmers market. The role of the market manager may vary from handling the basic operation of a market to developing the market and coordinating special activities.

1. Qualifications of the market manager.

   A) Good communication skills

   B) Relates well with others

   C) Good organizational skills.

   D) Is willing to accept the market manager position as their sole responsibility. It is advisable that the market manager not be a vendor, so all time can be entirely devoted to the direction and supervision of the market.

   E) Good leadership skills. Has the ability to guide and maintain the stability of the market.

   F) Background in fruit and vegetable production and a thorough knowledge in evaluating product quality.

   G) Responsible and capable of carrying out a variety of duties.

   H) Has a thorough understanding of the regulations and ordinances governing the farmers market and the affect those rules have on the operation of the market.

   I) Good decision maker. Must be able to make quick, accurate decisions. Stands by decisions.

   J) Punctual

   K) Reliable

2. Responsibilities of the market manager.

   A) Acts as the administrator of the market, exercising general supervision over the market and its activities. Keeps the operation of the farmers market running smoothly and effectively.

   B) Interprets market rules and regulations. Makes necessary judgments and decisions if questions or concerns arise.

   C) Enforces all farmers market rules, regulations, ordinances and codes.

      1. Monitors activities within the market.
      2. Ensures all market happenings comply with stated guidelines.
      3. Takes disciplinary action when necessary.

D) Mediator

1. Settles disputes in the market.
2. Deals with complaints.
3. Accepts suggestions.
4. Is final decision maker.

E) Communication and information link between all facets of the market development and operation. Makes vendors aware of market policies, activities and promotions, ensuring the smooth and effective operation of the market.

F) Develops and maintains a consumer information booth at the farmers market.

1. Tracks local food store prices and displays information on price board. Displaying prices enables consumers to compare costs and heightens awareness regarding product quality and freshness in relation to price.

2. Displays point of purchase information.

   a. Supplies nutritional information on specific products.

   b. Offers recipes, preparation and storage ideas.

   c. Provides food samples, allowing the consumer to see and taste a product.

3. Uses a sign in guest book, asking for consumer name and address.

   a. Consumer numbers can be determined to evaluate success of promotions.

   b. Provides information for estimating the range consumers travel to attend the market.

   c. Offers an opportunity for consumers to give positive or negative comments concerning the market.

   d. Used to inform customers of any market mews.

G) Responsible for handling market fees.

1. Collects stall fees from vendors.

   a. Seasonal fees. A vendor pays a set rate to reserve a specific stall for the duration of the farmers market season.

   b. Daily fees. A vendor pays a set fee each time the farmers market is utilized. Stalls are generally assigned on a first come - first serve basis.

2. Collects fees from fines. For example, A vendor is fined for not cleaning up his stall at the close of the market day.

H) Assigns stalls to vendors.

  1. Vendors who purchase seasonal stalls receive top consideration when making assignments.

  2. Vendors purchasing stalls on a day to day basis receive consideration on a first come, first serve basis.

  3. If a vendor with a seasonally reserved stall has has not arrived within a set time of the market opening, without prior notification to the market manager, that stall may be reassigned by the market manager for that market day.

I) Serves as quality control person for the market. All products must comply with the food guidelines developed for the market. Only top quality products should be sold through the farmers market.

J) Works with grower group or representative to encourage an adequate quantity and a broad variety of product each market day. The market manager provides information as to which products are in high demand and/or in low supply.

K) Ensures that all required forms dealing with the operation of the farmers market are properly filled out and filed. These include vendor registration forms, fee receipts and daily market reports.

L) Arranges for someone to be responsible for the market during any absence, and gives vendors prior notice.

M) Maintains a clean and attractive market at all times. Ensures that the market area is properly cleaned up at the end of the day. Enforces penalties on vendors who do not leave their stall area clean.

N) Develops and prepares emergency plans. As leader of the farmers market, the market manager should always be prepared for emergencies. It is advisable that s/he have quick access to a first-aid kit and a fire extinguisher.

SECTION J: PROMOTIONS AND ADVERTISING

1. PROMOTIONS.

A. Promotions are a way to attract and involve community members, the media, and consumers in the market. Promotional activities are important for maintaining consumer traffic throughout the market season...used early in the season to draw consumers to the market and during the season to maintain customer traffic levels during slow periods.

B. Promotional activities should be well advertised and aimed at drawing general public interest and stimulating involvement.

C. Examples of promotional activities.

1) Cooking Demonstration
Invite a local restaurant to demonstrate food preparation techniques. The business receives publicity and consumers discover new preparation ideas, and may have the opportunity to sample untried product.

2) Produce Pedal Tractor Pull
Children 10 years and under are divided into age groups. A small pedal tractor is used with a box trailer attached for carrying pre-weighed cloth vegetables filled with pea gravel. A few of the vegetables are on-board at the start of the pull with additional weights added at designated locations along the track. The child in each class who pulls the furthest is the winner. Older age classes should start the pull with a heavier initial load.

3) Harvest Festivals
Activities highlighting a popular fruit or vegetable during the peak of its season.

a.Pie baking or eating contest
b.Pumpkin carving contest
c.Sweet corn roast
d.Tomato pitch at local celebrity

4) Community Celebrations and Festivals
Integrate market promotional activities into the community theme or convince the festival's planning committee to locate some of the planned activities in or near the farmers market.

5) Drawings for Prizes
Encourage all consumers to register by signing their name, address and phone number on a slip of paper. The drawing should take place at the end of the market day. This not only works as an added incentive for attracting customers into the market, but it also provides the market master with an estimate of the number of consumers in the market on a given day, and an indication of the market's geographic service area. This activity is generally used in conjunction with other major promotional activities.

6) Basket(s) of Bounty Auction
Product can be donated by each vendor and placed in a large basket, or vendors can individually prepare baskets displaying their own product. Baskets are placed on display for a short period of time and then auctioned off to the highest bidder. Proceeds from the basket(s) can be used to finance future market activities, or the receipts from the individual baskets could be retained by the respective vendor.

7) Other Activities
   a. Musicians and craft people performing their arts.
   b. Educational exhibits and demonstrations.

2. ADVERTISING.

A. Maintain a consistency in advertising presentation (i.e., lettering style, market name, or graphic illustrations). Consumers will become familiar with and develop an association between the advertisement and the market.

A similar style of presentation can be used on the following to act as a means of advertising.

1) Signs/Posters/Flyers
2) Banners
3) T-shirts
4) Aprons
5) Hats
6) Bags
7) Headings for news releases, public service announcements, and newspaper ads

B. Consumer benefits should be used in advertising campaigns.

1) Product freshness and quality.
2) Product variety...highlighting the unusual.
3) Farmers market social atmosphere.
4) Shopping at the farmers market keeps dollars in the local economy.
5) Comments on pricing should not be included.

C. Target initiation of advertising so as to gain sufficient attention and coverage prior to when impact is desired.

D. Permanent or Semi-Permanent Signs/Posters/Flyers

1) Effectiveness is dependent on the following.

   a. Appearance
   b. Content
   c. Visibility
   d. Location

2) Placement should be in strategic locations where it is visible from the greatest distance and where it will attract the consumers eye. (Note: for signs refer to Section H)

3) Location of the farmers market should be clearly indicated, regardless if it is located on-site or off-site.

4) Being able to read a sign at a distance depends on the colors and the size of the letters utilized. Selected colors should attract the eye and be easy to read.

5) Art work should be professional and clearly lettered so it is easy to read.

6) The costs and time involved with the distribution of circulars and flyers needs to be considered. Major advantages of these advertising tools are:

   a. They can be posted where a large number of people gather.

   b. Individually distributed so they can be kept by the consumer as a reference.

E. Media Coverage.

1) Special market promotional activities can be covered, or human interest stories can be developed about market participants.

2) The media sources beneficial to a market varies from community to community. Possibilities include:

   a. newspaper
   b. area shopper
   c. radio
   d. television
   e. local cable company's news channel

3) Make contacts with those who produce or host local talk show programs and suggest a farmers market program.

4) New Releases.

   a. Contact newspapers and get a background on the kind and degree of coverage they would offer, and what angle they would use (food section or farm section).

   b. Information should be presented in a concise and to the point manner.

   c. At the top of the page first type the date; followed by the centered heading "FOR IMMEDIATE RELEASE;" then the heading "SUBJECT:" with a statement explaining the subject of this release; and then type the heading "FOR MORE INFORMATION CONTACT:" type the name, address, and phone number of your organization's contact person.

   d. The lead sentence should contain the main point of the story, It answers the questions: who? what? when? where? and why?

   e. The subsequent body of the news release builds on the central facts, supporting and expanding them.

f. The release should be typed, double spaced, and have at least a one-inch margin on both sides of the page.

g. News releases should be sent to newspapers, radio and television stations at least one week before it is to appear.

5) Public Service Announcement (PSA)

a. The Federal Communications Commission requires all radio and television stations to provide a designated amount of air time for public service announcements.

b. A PSA is basically prepared in the same manner as a news release, except:

- the subject matter or special activity should be presented before giving information on the contact person, and

- the amount of time it takes to read the announcement aloud needs to be noted.

c. Radio stations generally prefer PSAs to be 10, 15, or 30 seconds in length, and television stations generally will not use anything but 10 or 30 second spots.

d. Contact the station's community affairs director to find out exactly what format the station requires.

6) Newspaper Advertising

a. Classified ads:

- Located in the midst of a whole page of other like ads...little distinguishing characteristics for quickly drawing the readers eye.

- Advertising fees are generally calculated on a per word basis.

b. Display ads:

- Attracts the readers eye by using larger, stylized letters and/or graphics.

- The advertising fee schedule is base on measured dimensions, either calculated in column inches or page portions.

- Costs are typically higher than with classified ads.

SECTION K: THE GROWER GROUP

A. Recruitment of growers to participate in the farmers market.

1. Who is responsible: EVERYONE.

   a. The market steering committee has the primary responsibility to recruit vendors for the market.

   b. Individual growers should try to encourage others to participate. Though this might be seen as increasing competition, generally any increase in vendors participating in a market will increase the number of customers patronizing the market.

   c. Supporting groups, should be a source for recruiting vendors.

2. How to recruit.

   a. Contact those who are currently growing and selling through other outlets.

   b. Contact market participants in nearby towns. Many growers are often interested in participating at markets in various locations.

   c. Through posters and by using all media sources announce growers are needed and give phone number of individual to contact.

3. When to recruit.

   a. For a new market it is imperative to begin early. Many winter farm meetings are planned during the previous summer and early fall. Contact sponsors of such meetings and request time at their meetings to recruit. Be sure and set a date for the growers to meet.

   b. For an existing market not only use the method explained above, but also devise a method to solicit vendors during the market season. It is not unusual for a prospective vendor to check out the market prior to actually participating. Provide a way for interested vendors to obtain information at the market site.

B. Expectations of the market.

1. Impact growers expect of the market.

   a. Growers expect the market's managing organization to provide a buying crowd.

   b. Growers generally expect the market entity to advertize, promote and run the market on funds derived from stall fees.

   c. Growers generally regard a market failure as a problem caused by the organizing committee, even when they have not offered input.

2. Impact Growers should have.

   a. The growers should be represented on the market steering committee. It is not a rule that the vendors operate the market. In fact most markets are not run by the vendors.

   b. The growers' representation on the steering committee should be selected by the growers and act on behalf of the majority.

   c. Any complaints or suggestions should be carried by the growers's representative to the market steering committee meetings. Only complaints which are of importance to the total group should be brought before the steering committee. The growers' representative should not enter personal concerns without making sure such concerns are in the majority interest.

   d. The growers should have a major roll in determining the market season.

3. Impact growers could have. The more highly organized the growers are the more impact they will have over the market.

   a. Growers could have major impact on market promotions. Either through product donations or through monetary contributions. Expecting stall fees to cover all market costs is generally unrealistic.

   b. Off season fund raising activities could be one of the primary roles of the grower group. Remember, during the selling season the vendor is usually to busy to work on fund raising and promotion activities. Therefore, market season activities usually fall on other members of the market steering committee.

C. Organizing the grower group.

1. Deciding on what type of organization is best suited for the group.

   a. It is not imperative for the group to formally organize an association or other formal organization to impact the market.

   b. Decide on the goals of a grower organization, then decide on the structure best suited to carry out the goals.

   c. The more highly organized the grower group is the more commitment it will take to carry out the wishes of the growers.

2. Selection of a group leader.

   a. determine the duties of the leader prior to asking an individual take on the obligation.

   b. Select one who can represent the entire group.

D. Seminars and Grower Meetings. The object is to provide valuable information for improving the market or improving the sales skills of the individual grower.

1. Merchandising strategies. There are always new ways to merchandise products, therefore a merchandising seminar should be held each year.

    a. Product displays are very important to the success of sells.

        1) At a farmers markets displaying products out of the sun, incorporating the use of ice to retain freshness, providing exceptional quality or displaying the products in appropriate containers can greatly enhance the sales potential.

        2) An attractive display can result in impulse buying. A free sample can break down the buyers resistance to purchase.

    b. When possible provide added services to the customers. Providing new preparation hints, care instructions, or appropriate containers for carrying the product home can greatly improve customer relations.

    c. Grower image is a contributing factor to repeat sales.

        1) Smoking, an unkept appearance, dirty clothes, etc.. are all negative images in the customer's mind.

        2) Thoughtful expression of appreciation is a valuable advertizing technique. A simple thank you or genuine smile can make the difference in a customer sharing their satisfaction with a friend.

    d. It will be of great advantage to label the product by variety. Many customers will gain confidence in a particular variety and come back again and again for more. Labeling will also cut down on variety questions by customers.

    e. Displaying prices for individual products is determined by several conditions.

        1) When the demand for a particular product is much greater than the supply, then pricing the product will cut down on questions and enable the vendor to service more customers.

        2) When there is an abundant supply of product, it may be beneficial to leave it unpriced. This will require the customer to ask for a price and give the vendor the opportunity to promote the product.

        3) Pricing strategies are very important and should be given great consideration. Caution should be exercised in negotiating prices or changing prices to reduce volume, for both can have adverse effects on continual sales.

        4) As growers become more informed on pricing strategies, price war problems between vendors should be reduced.

    f. Growers should always display their name and address. This acts as a silent signature that boosts a customer's confidence in the product.

2. Pricing.

    a. Pricing is based on total costs of production, transportation and marketing.

        1) Even though the market may be local always calculate the cost of transportation and cost to market the crops. Include the wear and tear on equipment and time spent selling.

        2) Do not offer product below the cost of production and marketing.

    b. consider the pricing strategy. That is selling by the unit or by weight.

        1) Selling by the unit is the most simple way to insure accuracy. Unit measures include selling by the piece, the dozen, the peck, etc.

        2) If scales are used, they have to be inspected and certified. The primary units of measure by weight include the ounce and pound.

    c. When is it appropriate to adjust prices.

        1) When the quality of the product is inferior.

        2) When the volume is large enough to give a discount.

        3) When a commercial establishment buys on a regular basis and would normally be considered a wholesale customer.

        4) When a repeat customer complains. A complaining customer generally wants to do business with the vendor. If not, they would simply go to another vendor and not bother.

    d. Price wars should not exist in the farmer's market.

        1. It is imperative to not sell product at a price below the cost of production. This is of no benefit to anyone.

        2. Often hobby gardeners can offer product at a much reduced rate. Do not get involved in a price battle with a hobby gardener. The commercial producer cannot win such a struggle.

        3. The more knowledgeable growers are of pricing strategies the less time will be spend on slashing prices

    4. Workshops on pricing strategies will help prevent price wars.

e. Price fixing is illegal and growers cannot overtly conspire to set prices. Once such practices begin, they are hard to stop.

SECTION L: MARKET MANAGEMENT RECORDS

1. Vendor registration form.

    A. Records grower information. The market master is able to record which growers participate regularly at the market.

        1) Individual grower information.

            a. Name
            b. Address
            c. Phone number

        2) Mailing lists of participating growers can be compiled.

    B. Stall information.

        1) Stall numbers are assigned and recorded.

        2) Payment structure.

            a. Seasonal stall fee
            b. Daily stall fee

        3) Serves as a receipt for the stall fee.

    C. Product information.

        1) Types of product for sale.
        2) Statement of point-of-origin of the product.

    D. Agreement of compliance is a statement saying the grower is aware of the market's rules and regulations and agrees to abide by them.

2. Tracking information. Recording information on a daily basis will provide data to evaluate the effectiveness and success of the farmers market. Through continual evaluation, market strategies can be adjusted to meet needs.

    A. Consumers. Determine the consumer profile. Knowing the consumer group will help the market determine effective marketing strategies.

        1) Buying averages. How much does the average consumer purchase per visit.

        2) Product popularity. What products do the consumers look for and track purchase.

    B. Track of vendor participation.

        1) Names of vendors.
        2) Frequency of each vendors participation in the market.
        3) Types of products each vendor sells.

C. Promotions.

1) Determine degree of participation and who participated.

2) Record what made the promotion affective or ineffective, i.e.,. thorough advertising, weather conditions, lack of participation or interest.

3) Positive results of the promotion or activity.

4) Proposed changes to make the promotion more effective.

5) Weather and its affect on the market's success. Weather conditions should always be included when recording information. The success or failure of a special event or promotion may be directly related to the day's weather, not the event.

3. Coupons can be an incentive for consumers to visit the farmers market.

A. Coupons can give special discounts on products. Providing a special discount on a product during the peak of its season will draw the consumers to the market. Once they are at the market, there is a good chance they will make other purchases in addition to the special sale item.

B. Coupons redeemed at the farmers market can help determine the success of promotion or advertising campaign.

C. Coupons that are required to be signed by the consumer can provide names for future mailing lists.

*****COUPON***COUPON***COUPON***COUPON***COUPON***COUPON*****

25% OFF IOWA GROWN APPLES

Receive 25% off 1 and 2 pound bags of fresh Iowa grown apples.

Redeem at ________(Vendor's name)________

YOURTOWN'S FARMERS MARKET	HOURS:
123 SOUTH MAIN	TUESDAY 1:00 P.M. - 6:00 P.M.
YOURTOWN, IOWA	SATURDAY 8:00 A.M. - 1:00 P.M.

NAME:____

ADDRESS:______________________________________

CITY:____

Offer good through October 1, 1987

*****COUPON***COUPON***COUPON*****

FREE PUMPKINS

COME TO YOURTOWN'S FARMERS MARKET FOR YOUR FREE PUMPKIN

REDEEM AT ________(VENDOR'S NAME)________

YOURTOWN'S FARMERS MARKET	HOURS:
123 SOUTH MAIN	TUESDAY 1:00 P.M. - 6:00 P.M.
YOURTOWN, IOWA	SATURDAY 8:00 P.M. 1:00 P.M.

OFFER GOOD FROM OCTOBER 1 THROUGH OCTOBER 31, 1987

GROWER REGISTRATION FORM

YOURTOWN'S FARMERS MARKET

123 SOUTH MAIN
YOURTOWN, IOWA

VENDOR NAME:____

ADDRESS:____

CITY:________________________STATE:______ZIP CODE:______

PHONE NUMBER:_______________________________________

ASSIGNED STALL NUMBER:__________

STALL FEE

___ Seasonal fee (Seasonal Rate)

___ Daily fee (Daily Rate)

PRODUCTS FOR SELL

PRODUCT	POINT-OF-ORIGIN

AGREEMENT OF COMPLIANCE

I, ____ have read and am fully aware of YOURTOWN'S FARMERS MARKET' specific rules. I hereby agree to comply with these rules and regulations, and all other Federal, State and local regulations that apply, knowing full well that I will forfeit my right to sell at the YOURTOWN'S FARMERS MARKET if I am found to be in noncompliance.

____
NAME

____
DATE

DAILY MARKET RECORDS

YOURTOWN FARMERS MARKET

123 SOUTH MAIN
YOURTOWN, IOWA

DATE:________________ HOURS OF OPERATION:________________________

NUMBER OF VENDORS:________________

ESTIMATED NUMBER OF CONSUMERS:________________

SPECIAL PROMOTIONS OR ACTIVITIES:________________________________

____

____

____

WEATHER CONDITIONS:____

ADDITIONAL COMMENTS:____

____

____

____

____

____

____

191 "END OF DOCUMENT"